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N.A.A. BULLETIN

September 1960

In Three Sections
Section 1

Acceptance of Direct Costing

❖

Variance Analysis

❖

Contractor's Bonds

❖

Accounting for—

Route Receivables, Mining Equipment

N.A.A. BULLETIN

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The Dimensional Principle in the Analysis of Variance

by DANIEL LIPSKY

AN IMPORTANT ASPECT of the accounting function is interpretation and analysis of financial statements and accounting data. This is often accomplished by means of comparisons. Thus, an inventory amount is more meaningful when compared with a similar inventory at another date or compared with a budgeted inventory or even with an inventory amount of a comparable enterprise. A monthly statement of operations has greater significance when placed against a series of similar statements for prior months or compared with statements for the same month in one or more prior years or when related to a budgeted plan of operations. The significance of the entire statement and of each of its elements is enhanced by such comparison. Each comparison, of course, gives rise to a difference or variance. Mere statement of the amount of the variance, however, is often only the first step in the analytic technique. One is often called upon to analyze or break up the variance, itself.

Occasion for analysis of variance may be found in almost every area of accounting. Such analysis is frequently applied when working with cost or budget differences. One would expect, therefore, to find readily available in the literature a clear-cut frame of reference with a demonstration of the fundamental reasoning involved. Standard treatments, however, rather arbitrarily state how the aggregate variance is to be analyzed or applied without explaining the underlying logic. In certain respects these presentations are not entirely sound. Further, separate treatments for material, labor and overhead variances obscure the fact that a common basic formulation is applicable to all of these variances. The purpose of this paper is to demonstrate a fundamental framework for variance analysis and to relate it critically to variance analysis found in practice.

Variance Can Be Analyzed Dimensionally

A variance is a difference or deviation between two amounts. One of these amounts is the basic, standard, or reference amount, and the other is the amount

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being compared with it. The variance arises out of the comparison. In each comparison, either amount may be designated as the basic amount; the other amount, then, is the comparable amount. However, these designations are likely to take a common pattern. Where comparisons are applicable to different dates or periods, the earlier date or period is usually treated as the basic one. Where budget variance is to be analyzed, the budgeted figure is normally selected as the basic amount. Similarly, where variations from standard are involved, the standard would commonly be designated as the basic amount. To illustrate specifically, the accountant may be concerned with such variances as the following:

Basic amount	*Comparable amount*
cash balance at a certain date	cash balance at a later date
inventory value anticipated at a given date according to a budget	actual inventory value at the given date
dollar sales for a year	dollar sales for the following year
standard unit output for a period	actual unit output for the same period
budgeted cost	actual cost
standard labor (or material or overhead) cost	actual labor (or material or overhead) cost

Although variance between a basic amount and a comparable amount may be described merely in terms of the difference between the two amounts, it is often desirable to break this difference into a number of logical components of the total difference. While all variances can be analyzed in terms of a single variable or dimension, an analysis in terms of components of a total difference commonly rests upon a concept of two or three dimensions. Theoretically, if not practically, one might be concerned with more than three dimensions. Since the dimensional aspect is hardly apparent when dealing with only one variable and becomes difficult where there are more than two variables, let us first consider the framework of two-dimensional variance.

Two-Dimensional Variance Analysis

Where the amounts to be compared may be considered as results of two variables or dimensions, one of these variables may generally be treated as the quantity factor, designated here as Q. The other dimension may be consid-

ered as a rate, to be termed R. The variance will ordinarily make its appearance when basic and comparable figures are brought together for such information as is shown in the amount column below but can be resolved into its dimensions only through the factors shown in the quantity and rate columns:

Quantity (Q)	*Rate (R)*	*Amount*
units sold	price per unit	dollar sales
units produced	cost per unit	dollar cost of production
units of material consumed	cost per unit	dollar cost of materials consumed
inventory in units	value per unit	total inventory value
days worked	units produced per day	production in units for a given period
number of workers	number of working days in a calendar period	total man days in period
labor hours in product	hourly labor rate	total labor cost in product

The above designations of these dimensions as quantity and rate is not absolute. In at least some instances, these designations would appear to be interchangeable, depending on orientation. Thus, in the above illustration, the number of workers is treated as the quantity factor, with the working days in the calendar period considered as an expression of the rate at which this quantity is employed. One might, instead, handle working days as the quantity variable with the size of the working force as the rate factor. The question of definition of dimension as either quantity or rate can be avoided, either by use of specifically descriptive terms as units, price, cost, and days, or by completely neutral symbols, such as X and Y. Q and R are used in this article, since much of this discussion is in general terms. Although at times interchangeable, they serve to remind one of the essential characteristics of the dimensions and have been employed for that reason.

To generalize the nature of the variance, let:

Q = the quantity involved in the basic amount

q = the increment or decrement in Q to arrive at the quantity involved in the comparable amount

R = the rate involved in the basic amount

r = the increment or decrement in R to arrive at the rate involved in the comparable amount.

Either or both q and r can be positive, zero, or negative. The variance can then be determined as follows:

I The basic amount $= QR$

II The comparable amount $= (Q + q)(R + r)$
$= QR + qR + Qr + qr$

III The comparable amount — the basic amount = the variance.
$QR + qR + Qr + qr - QR \qquad = qR + Qr + qr$

Diagramatic illustration sometimes helps clarify the significance of the symbols.

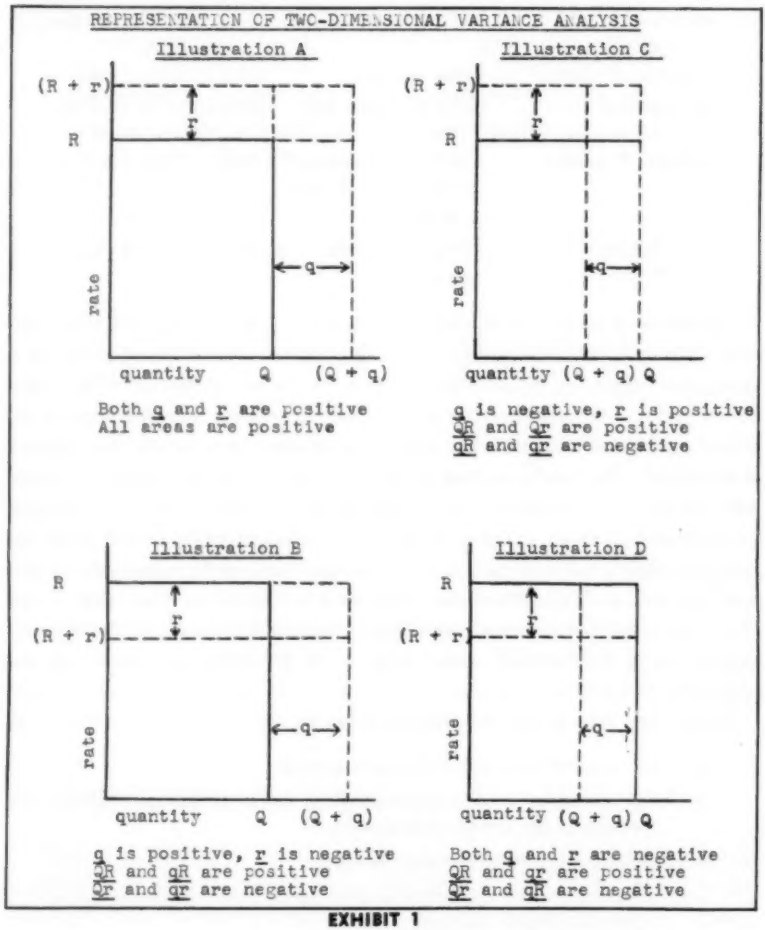

EXHIBIT 1

Full diagramatic representation of the possibilities of two-dimensional variance calls for nine illustrations:

Where q is	*and r is*	*Where q is*	*and r is*
positive	positive	zero	negative
positive	zero	negative	positive
positive	negative	negative	zero
zero	positive	negative	negative
zero	zero		

Where both q and r are zero, both the basic and comparable amounts are identical and there is no variance. Where either q or r is zero, there has been a change in one dimension only and a one-dimensional diagram would probably serve as well as a two-dimensional representation. Thus, eliminating all cases where a zero appears, there remain the four illustrations shown in Exhibit 1. Illustrations B and C are interchangeable when dimension Q and dimension R are substituted for one another. The total variance $(qR + Qr + qr)$ is represented by three contiguous areas, qR, Qr and qr, which may be positive or negative in character depending on whether the deviations q and r are positive or negative.

In the foregoing discussion and illustrations, the change r has been treated as a single quantity. However, in a comparison of dollar sales, for example, there may be several different prices in the course of a period of time. A diagramatic comparison of actual sales with budgeted sales, giving effect to changing prices, might appear as in the left-hand portion of Exhibit 2. The representation can

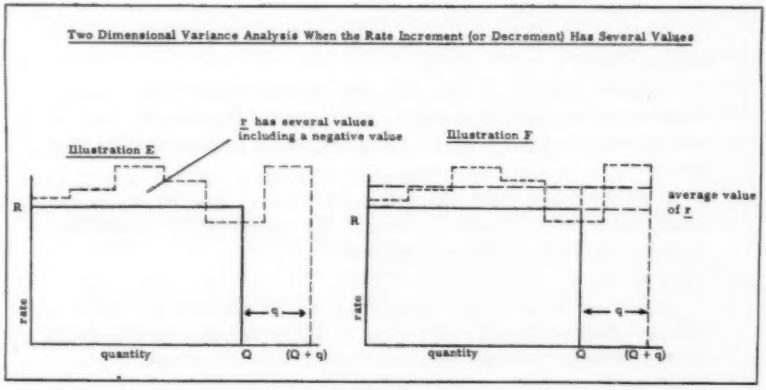

EXHIBIT 2

be simplified by setting up an average value of r to achieve a rectangle with the same area as the irregular figure resulting from the several prices. Such a rectangle appears in the right-hand portion of Exhibit 2. In the following discussion r is treated as an average value of all the deviations during a period. Under appropriate conditions q may similarly be treated as an average.

Components of Two-Dimensional Variance

As revealed in the illustrations, the two-dimensional variance is the aggregate area obtained by subtracting the solid-line rectangle, QR, from the dotted-line rectangle, $(Q+q).(R+r)$. Obviously this total area of variance may be broken into components in a number of different ways, each of which may call for a different language description. Let us consider the field of possibilities.

Diagramatic representation is usually helpful. However, since each of the two variances can be either positive or negative, diagramatic representation involves four illustrations for each grouping of variance components. It may be easier, therefore, to explore the possibilities of grouping of components by means of simple algebraic manipulation. Thus there is the following set of possibilities for description or analysis of two-dimensional variance:

1. It may be described as a single amount, being the total of the three terms, qR, Qr, and qr: $[qR + Qr + qr]$
2. The three distinct areas may be stated separately: $[qR] + [Qr] + [qr]$
3. Combination of the terms containing the common factor r permits the three elements to be reduced to two component areas: $[qR] + [r(Q + q)]$
4. Similarly, combination of the common factor q results in the following: $[q(R + r)] + [Qr]$
5. Another method of reducing the original three terms to two would be to allocate the area qr between qR and Qr, thus: $[qR + qrx] + [Qr + qr(1 - x)]$, where x is positive and less than one.
6. If the term qr is both added to and subtracted from the expression, which leaves the total value unchanged, the result may be factored and expressed as three component sub-areas: $[q(R + r)] + [r(Q + q)] - [qr]$
7. Referring to the sixth arrangement, above, the area qr, which is now an offset to the other two areas in the expression, can also be allocated between the other two: $[q(R + r) - qrx] + [r(Q + q) - qr(1 - x)]$, and again x is positive and less than 1. This treatment is similar in result to that ob-

tained in the fifth arrangement. It is identical if the value of x in this seventh arrangement is equal to $1 - x$ in the fifth treatment.

8. Finally, and this is a group of arrangements, either or both of the areas qR and Qr may themselves in a given situation be divided into a number of significant sub-areas. The area qr may be treated separately, jointly with either qR or Qr (as in the third and fourth arrangements), or allocated between qR and Qr.

Illustrations of Two-Dimensional Variance Arrangements

Illustrations of most of the foregoing analytical arrangements can be found in accounting literature, although rarely is it explained why the particular grouping selected is to be preferred over the several other possible treatments.

The first arrangement, $[qR + Qr + qr]$, may be considered a limiting case. Since the total variance under this arrangement is not broken into components, in a sense, variance is not being analyzed. Use of the total, only, is equivalent to one-dimensional analysis. The entire variance, due to both quantity deviation and rate deviation, is treated as a single amount.

The second arrangement breaks the total variance into the three component areas:

qR — which is part, but not all, of the total variance due to the quantity deviation,

Qr — which is part, but not all, of the total variance due to the rate deviation, and

qr — which is the portion of the total variance due *jointly* to both quantity and rate deviations.

It would be particularly useful to be able to segregate the total variance into two sections only, the portion due to the quantity deviation and the portion due to the rate deviation. Unfortunately, this is not possible. The area qr cannot be divided into sections in which only a single deviation is in operation, since no part of this area can exist without the effect of both q and r. In comparing actual sales with budgeted sales, for example, there is the

partial quantity factor — the increase (or decrease) in units sold multiplied by the budgeted price, plus (or minus) the

partial price factor — the increase (or decrease) in the unit price times the units budgeted for sale, plus (or minus) the

partial price-quantity factor — the change in price times the difference between the units actually sold and the units budgeted for sale.

The writer has not seen illustrations in accounting literature qualifying each

portion of variance with the word, "partial". However, recognition of the situation would appear to be implicit by the separate use of the qr section.

A frequent illustration of the third arrangement is to be found in analysis of material or labor variances in a standard cost system. With the intent of simplifying presentation, the entire variance is broken into only two components. The total material cost variance is broken into material use variance and material price variance; the total labor cost variance is broken into labor efficiency variance and labor rate variance. In each instance, it would seem there is an implication in the titles themselves that the material price variance and the labor rate variance represent the total variances due to rate deviation and that the use or efficiency elements represent the total variances due to deviation of actual quantity from standard. However, as indicated above, such twofold allocation is not logically permissible. The use or efficiency variances, qR, do not take into account the fact that the area qr includes some of the effect of the quantity deviation. By the same token, labeling of the area $r(Q + q)$ as the material price variance or labor rate variance ignores the fact that the entire subarea qr is due to both rate and quantity variances.

There is another aspect, though, that of controllability of the overlapping area. Quantity variances normally are expected to be controllable by managers. Therefore, quantity variances can be interpreted as measures of managerial efficiency. On the other hand, price changes may be beyond the control of a factory manager. In such situations it is generally considered desirable to have the efficiency measurement "uncontaminated" by any effect of the price change. Under the assumption that the price or rate change is not controllable, "contamination" of the amount allocated to this factor is presumably of lesser significance. However, under certain conditions, price variance can be considered as a measure of efficiency of a purchasing department. The quantity consumed is not controllable by this department. From the point of view of such purchasing department, it might well be appropriate to join the qr area with qR rather than Qr. This latter combination would then be representative of the fourth arrangement, $[q(R + r)] + [Qr]$.

The matter of controllability may be significant in determining the pattern of variance analysis or the classification of data on detailed statements of operation. The statements, themselves, and elements of these statements are ordinarily more meaningful when compared with bases or standards, whether these be arbitrary norms, theoretical achievement goals, or actual results of prior periods. The value of comparison is enhanced where there is a series of such comparisons such as a string of monthly figures. Similarly, variance elements become more meaningful where there is a series of data. Even though one may be critical of

the usual two-element analysis of labor or material variance, the use of the identical technique with the identical element of incompleteness or "contamination" for each of the amounts compared tends to impart a validity to the series of comparisons.

Validity, however, can be obtained in another fashion. Valid significance can be extracted by translations of amounts of variance into percentages of variance. Thus the quantity deviation can be expressed by reducing q/Q to a percent. Similarly, r/R can be used to express the percentage of deviation in rate. The problem caused by the area of joint deviation, qr, is thus eliminated. However, where material or labor variances have already been computed in terms of a price or rate variance, $r(Q + q)$, and in terms of a use or efficiency variance, qR, the percentages are to be computed as follows:

> percentage of use or efficiency variation equals use or efficiency variation, qR, divided by standard labor or material cost, QR.
>
> percentage of price or rate variance equals price or rate variance as computed, $r(Q + q)$, divided by actual labor hours or actual units of material consumed multiplied by the standard rate, $R(Q + q)$.

Another approach to the handling of the qr problem area is found in the fifth of the listed arrangements, $[qR + qrx] + [Qr + qr(1 - x)]$. The area qr is arbitrarily divided in some manner, with one share assigned to the rate deviation and one share assigned to the quantity deviation. Two techniques for division readily come to mind. The qr area may be divided in half and shared equally between the quantity and rate deviation. It may instead be allocated in proportion to the partial quantity and rate deviations so that:

$$\frac{qrx}{qr(1 - x)} = \frac{qR}{Qr}$$

The allocation of qr between Qr and qR represents a practical attempt to meet the desire for simplification. The result is a division of total variance into two parts, one labeled quantity variance and the other labeled rate variance. Both are "contaminated" in part by the joint qr variance. This might be considered preferable by some to either arrangements three or four in which the entire qr area is assigned to either Qr or qR.

Arrangement six, $[q(R + r)] + [r(Q + q)] - [qr]$, is another three-area formulation. It differs from arrangement two, however, in that the qr area is used three times instead of once. It is combined with Qr and with qR and is subtracted by itself. While this permits of a measure of symmetry, it is even more subject to criticism in terms of "contamination". None of the three areas under arrangement six is free from the joint effect of deviation q and deviation r. However,

if one defines the base measurements as $Q + q$ and $R + r$ and the comparable measurements as Q and R, then arrangement six is identical with arrangement two except for the designation of the base. In an analysis of variance from standard cost, although mathematically entirely feasible, it would hardly appear logical to set the actual achievement as the base and the standard as the comparable amount. On the other hand, in a comparison of sales for one period with sales for another, there is no reason why either the earlier period or the later period could not be designated as the base. Similarly in analyzing variance between inventory at one date and inventory at another, either date could be set as the basic date.

The seventh arrangement, $[q(R + r) - qrx] + [r(Q + q) - qr(1 - x)]$ also provides "contaminated" results unless one considers the base and comparable measurements substituted for one another. The arbitrary negative allocation of the qr area from the other two areas is then similar to the situation in arrangement five. It may be noted, however, that the proportion

$$\frac{qrx}{qr(1-x)} = \frac{q(R+r)}{r(Q+q)}$$

is not the same as the proration illustrated in connection with the fifth arrangement.

The eighth arrangement, really a series of possible arrangements, is exemplified in situations where a total labor hour or material use variance is subdivided into more detailed categories, such as:

for material—poor or defective material, spoilage due to improper handling, erroneous calculation of standard

for labor—idle time due to machine breakdown, idle time for other reasons, time lost due to poor materials, re-routed work.

This analysis would most likely be in terms of standard unit prices, that is, R. The qr area would then be combined with Qr as in arrangement three.

One-Dimensional Variance

A great many accounting values can be viewed as at least two-dimensional. Accordingly, the inventory value is the result of the number of units times the cost per unit, the dollar volume of sales results from sale of a number of units at a price. On the other hand, a balance of cash does not lend itself to two-dimensional treatment unless one is translating into another currency or into some economic value as of another date wherein the change in real value of the dollar might be equated to r. A one-dimensional value cannot be treated two-

dimensionally, but two-dimensional values can be and are treated one-dimensionally.

The single dimension may be designated as T. In a diagramatic representation T, the basic amount, is a line. Its length in units is equal to Qr. The comparable amount, $T + t$, can be drawn as a line equal in units to $(Q + q)(R + r)$. t, the increment or decrement of T, is equal to $qR + Qr + qr$.

Three-Dimensional Variance

Some values are of three-dimensional origin. For example, total production may be viewed as the product of the number of machines in operation times the speed of operation of the machine times the hours of operation during the period. If the three dimensions are designated as Q, R and S, and the deviations as q, r and s, the total variance becomes $(Q + q)(R + r)(S + s) - QRS$. After multiplication and subtraction are performed, the total variance is the sum of seven component three-dimensional elements, or volumes:

three in which one deviation only operated	$qRS + QrS + QRs$
plus	
three in which two deviations operate jointly	$qrS + qRs + Qrs$
plus	
one volume in which all three deviations are involved	qrs.

Extended analysis of all the possible combinations of these seven sub-volumes is beyond the purpose of this paper. It should be noted, however, that a single valid measure of the total result of any one of the three deviations without involving the other deviations is no more possible under three-dimensional analysis than under two. This is so because of the three volumes caused by two deviations, jointly, and the one volume caused by all three deviations in concert.

In practice one simplifies analysis by combining two dimensions into one. This reduces the three-dimensional problem to one of two dimensions. Thus, in the foregoing illustration of total production, the number of machines and the hours of operation could be combined into machine-hours so that analysis of variance could be made in terms of machine-hours and speed of machine operation.

Overhead Variance

The mere fact that analysis is made in terms of three or four components

does not necessarily mean that more than two dimensions are involved. Overhead costs are often charged to the product on the basis of standard labor hours applicable to actual units produced. Actual costs can deviate from standard in the following manner: the number of units produced may be greater or less than the norm or standard; the actual labor hours per unit may be greater or less than standard; and the variable overhead expenses may average more or less per actual labor hour than provided in the standard. Each of these three deviations is independent of the others and each can be plus, zero, or minus. In terms of diagramatic representation, even if conditions of zero deviation are excluded, there are eight possible combinations of these deviations.

Overhead variance is usually broken into two, three or four components. One of these, the volume or capacity variance, relates to fixed costs which, by definition, do not vary. However, where production deviates from standard, there is an over- or under-absorption of fixed costs, giving rise to a variance. The other components relate to variable expenses and may be analyzed along the lines of the several two-dimensional arrangements discussed earlier. Where the entire residual, usually characterized as the controllable variance, is left as one amount, the first arrangement is being utilized. Where controllable variance is itself broken into three components, the second arrangement is utilized. One of the most common presentations, however, employs the third of the two-dimensional arrangements previously examined and divides the total controllable variance into two components, an efficiency variance and a budget, spending or expense variance. It is this latter technique which is illustrated below.

For generalized analysis and diagramatic representation, the following definitions are employed:

Q = the standard labor hours allocated to the actual production. This is the base quantity.

$Q + q$ = the actual labor hours required for the actual production. This is the comparable quantity.

$(Q + q) - Q = q$ = deviation of actual hours from the number of standard hours set for the actual production. Since we are dealing with costs, a positive value of q is unfavorable and a negative value is favorable.

R = the standard rate of variable expense per labor hour. This is the base rate for variable expenses.

$R + r$ = the actual average rate of variable expense per labor hour.

$(R + r) - R = r$ = deviation of actual hourly rate of variable expense from standard. A positive value for r is unfavorable and a negative value is favorable.

qR = the efficiency variance.

$r(Q + q)$ = the budget, spending or expense variance.

Additional terms are required for demonstration of the over or under- absorption of fixed charges.

Q' = the standard labor hours allocated to the standard output. This quantity has relevance only for calculation of over or under-absorption of fixed costs. It has no effect on variance of variable costs.

R' = the rate of application of fixed overhead per standard labor hour in the product.

$Q' - Q = q'$ = the difference between labor hours allocated to the standard output and the standard labor hours assigned to the actual output. Where Q' exceeds Q, q', the deviation, is positive and unfavorable, indicating under-absorption of fixed costs. Where Q' is less than Q, the deviation is negative and favorable, representing over-absorption of fixed costs.

$q'R'$ = the capacity or volume variance.

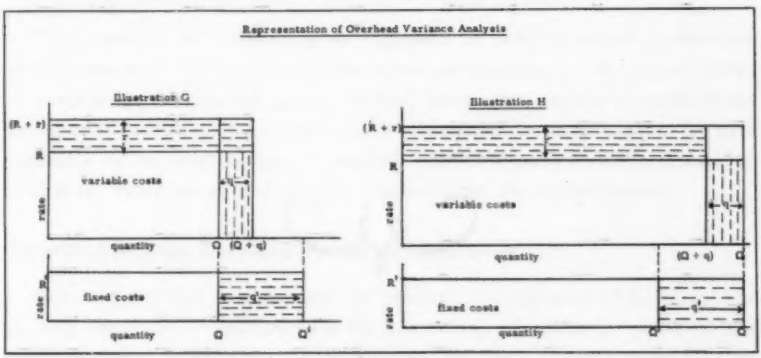

EXHIBIT 3

Two illustrations are presented in Exhibit 3. As may be noted, the fixed and variable elements are analyzed in separate but related diagramatic sections:

Illustration G: Production is below standard, but actual labor hours and actual average rate of variable expense per hour exceed the standards. The variances, represented by the shaded areas are all unfavorable.

Illustration H: Production is above standard; actual labor hours are less than standard, but actual average rate of variable expense exceeds standard. The capacity or volume variance, $q'R'$, is favorable; the efficiency variance, qR, is favorable; and the spending or budget variance, $r(Q + q)$, is unfavorable.

Becoming Versed in Variances

The responsibility of the accountant does not stop with the development of statements and analyses. It is also his responsibility to instill in management and other users of his reports an awareness of the scope and limitations of the significance of the information. In respect to analysis of variance, it is important that the accountant have a firm understanding of the nature of variance, the possible pitfalls, and the invalidities that could develop.

The dimensional concept is applicable to all variance situations. It helps distinguish between single and multi-dimensional conditions. For two-dimensional conditions, the dimensional framework clearly reveals the joint effect of quantity and rate deviations and the inherent impossibility of completely "pure" two-part allocation of total variance. Although this condition limits the value of this type of analysis, an awareness of the nature of this limitation can enhance the usefulness of the results.

Improving the Status of Direct Costing for External Reporting

by FRANK L. TRAVER

IT HAS BEEN SAID that stockholders reports, S.E.C. reports and tax statements are seldom issued on the direct costing approach and that companies using direct costing for internal purposes must convert this data to acceptable amounts for external purposes. Although this is generally the case, it is not always true. Some companies have been able to make the change successfully to the complete use of direct costing reports for all uses. Some of these cases, still much in the minority (about twenty by the most recent figure I have), will afford a good deal of interest as this article progresses.

First let us break down the acceptability for external reporting into two major categories. Some people would say there are more, but I think two groups or classes fit well for discussion purposes:

1. Acceptability by C.P.A.s for purposes such as stockholders report and S.E.C. filings.
2. Acceptability for federal and other taxation purposes.

The principles of accounting, as expressed in publications of professional associations of C.P.A.s, primarily the American Institute, set the pace or guide to acceptability for the first group. Federal income tax practice as administered through the courts and the Commissioner of Internal Revenue is by far the most important in the taxation area. It establishes the landmarks for tax acceptability, since many other taxing bodies tailor practices after the federal pattern.

Acceptability by Certified Public Accountants

First, I would like to delve into the problem of acceptance by C.P.A.s. The guiding statement of principles for the accounting profession is contained in a document called Bulletin No. 43 issued by the Institute's Committee on Accounting Procedure. Chapter 4 of this Bulletin contains one chapter devoted to inventory pricing. The comments in it pertinent to our subject are the following paragraphs which succeed each other on pages 28 and 29:

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STATEMENT THREE

"The primary basis of accounting for inventories is cost, which has been defined generally as the price paid or consideration given to acquire an asset. As applied to inventories, cost means in principle the sum of the applicable expenditures and charges directly or indirectly incurred in bringing an article to its existing condition and location.

DISCUSSION:

"In keeping with the principle that accounting is primarily based on cost, there is a presumption that inventories should be stated at cost. The definition of cost as applied to inventories is understood to mean acquisition and production cost, and its determination involves many problems. Although principles for the determination of inventory costs may be easily stated, their application, particularly to such inventory items as work in process and finished goods, is difficult because of the variety of problems encountered in the allocation of costs and charges. For example, under some circumstances, items such as idle facility expense, excessive spoilage, double freight, and rehandling costs may be so abnormal as to require treatment as current period charges rather than as a portion of the inventory cost. Also, general and administrative expenses should be included as period charges, except for the portion of such expenses that may be clearly related to production and thus constitute a part of inventory costs (product charges). Selling expenses constitute no part of inventory costs. It should also be recognized that the exclusion of all overheads from inventory costs does not constitute an accepted accounting procedure. The exercise of judgment in an individual situation involves a consideration of the adequacy of the procedures of the cost accounting system in use, the soundness of the principles thereof, and their consistent application.

STATEMENT FOUR

"Cost for inventory purposes may be determined under any one of several assumptions as to the flow of cost factors (such as first-in first-out, average, and last-in first-out); the major objective in selecting a method should be to choose the one which, under the circumstances, most clearly reflects periodic income."

These paragraphs are the only formally stated principles available to guide the Certified Public Accountant in judging the acceptability of financial statement presentation. Many people interested in direct costing would like to hear some reasonable interpretation of these words which could illustrate an acceptance of the direct costing principle. As much as I would like to do so, I cannot honestly say that such interpretation can be made. Valiant attempts have been made to demonstrate that direct costing complied with these principles. The trouble is that the people who can be convinced of this interpretation are

the users of direct costing and those who already believe in it, not the others who must conscientiously make their evaluation.

The arguments which conclude that direct costing is acceptable under the stated principles usually follow this order:

1. Exclusion of all overhead from inventory is specifically declared not acceptable; since direct costing does not exclude all overheads, it is not clearly eliminated.
2. The Research Bulletin states that selection of a method (and in the argument this is given a general interpretation meaning some cost accounting method) means choosing the one which most clearly reflects periodic income.
3. It follows that, since direct costing is the only method which clearly reflects periodic income, then it is really the one and only correct cost method to be employed.

In spite of any mighty effort to visualize the acceptability of direct costing in this way, the truth remains that anyone thoroughly familiar with Bulletin No. 43 realizes that this is picking several sentences out of context and slanting them toward the conclusion desired. Going back to the statements of principles, it must be recognized that the phrasing calling for selection of a method which "most clearly reflects income" is part of the statement concerning the several possible assumptions as to the flow of costs, such as first-in first-out, average, or last-in first-out. Furthermore, a careful reading of the examples of exclusions from overhead which may be proper under certain circumstances does not single out fixed costs, and I have never heard anyone attempt to show that it does. We have no choice but to include that, taken as a whole, the A.I.C.P.A.'s statements of principles regarding inventory pricing have not been interpreted in actual practice to condone direct costing. At best, we can say that it is not specifically ruled out.

Now, after this discouraging start let us look at current developments. Surveys are showing more companies using direct costing as the years roll by. N.A.A.'s 1953 report revealed seventeen manufacturing companies and one department store employing the technique. A research project now under way by N.A.A. found 197 users. Interviews with about one quarter of the list developed that twenty of these companies were reporting externally also on the direct costing principle. In only four cases did the independent public accountants mention its use in their certificates and, in no case, did they raise any objection or take exception to its use. A little later on, I will refer more specifically to the way in which the change was accomplished for one of these companies.

The Doctrine of Materiality — and Its Relevance to Acceptance of Direct Costing

The C.P.A., in exercising his responsibility, must determine that there has been effective or substantial compliance with generally accepted accounting principles. When he finds a deviation, he must ascertain the amount and the effect of the deviation from what the financial reports would have shown if strict compliance had been the practice. If he finds the differences immaterial in amount and effect, he need not qualify his opinion.

Determination of what constitutes a material item is reserved completely to the judgment of the C.P.A. in each specific case. Examples and illustrations for guidance can be spelled out but, in the final analysis, his independent, competent, and experienced judgment is the basis for such a determination.

Contrary to what some may think, the doctrine of materiality is *not* a convenient cloak to hide border-line practices. It is one of the most important fundamentals in developing and maintaining a dynamically balanced system of principles to afford reliable, meaningful, and effective financial and management reporting. Whether or not a certain deviation constitutes a material difference entails much more than an appraisal of the amounts involved. Probably even more important is a consideration of the net end result or meaning of the financial reports. If the public accountant fairly considers the interests of the stockholders, creditors, and third party readers as well as management—and finds that he sincerely believes all those concerned are being properly served and not misled in any way—then he will in all probability find that deviations from accepted principles are not material and that a qualification is not needed.

There can be more than one correct method. Choice among accepted accounting practices can mean substantial differences in balance sheet dollar amounts. For example, "lifo" and "fifo" valuation of the same inventory may differ widely. To be sure, a year of change presents special problems. However, the fact that various methods may place substantially different figures on an inventory presents no special problem of acceptance. (The method of pricing must be adequately disclosed, of course.) If, then, there can be more than one accepted method and acceptance of a method is related to the principle of materiality, it can also be said that, when enough competent professional men have evaluated enough similar circumstances, such as the use of direct costing for inventories, and have found the practice usable in the specific circumstances, then new patterns are developed and new or modified principles are born. It is through this use of judgment in application of the practical doctrine of materiality that our body of principles can be kept consistent and sound, yet sensitive to current needs.

Some Hope — but Avoid Over-Enthusiasm

In this connection, I would like to call attention to several key sentences which are in the preface of Bulletin 43 from which I have already quoted passages which we decided did not offer much to go on in respect of acceptability of direct costing. I construe these more hopefully:

> "These bulletins were the result of research by the committee on accounting procedure directed to those segments of accounting practice where problems were most demanding and with which business and the accounting profession were most concerned at the time.
>
> "Some of these studies were undertaken to meet new business or economic developments. Some arose out of the war which ended in 1943 and the problems following in its wake. Certain of the bulletins were amended, superseded, or withdrawn as changing conditions affected their usefulness.
>
> "The purposes of this restatement are to eliminate what is no longer applicable, to condense and clarify what continues to be of value, to revise where changed views require revision."

If the trend of adopting direct costing techniques continues, it is only a matter of time until the sheer weight of current practice will bring about a formal recognition of the principle. During this period of growth, it will continue to be very carefully scrutinized wherever an attempt is made to use it since it remains, at this point in time, outside the family of recognized acceptable practice. It must be very thoroughly examined to assure the adequacy of the reports. This may be a long time in taking place in spite of the current trends and the enormous amount of space being occupied by direct costing in technical publications today.

In the presentation of the case for direct costing, one technique is often used which may be making it harder for some to accept the method. This is the approach of comparing direct costing profit statements with absorption costing and then concluding that absorption costing is entirely wrong. This seems to place an unnecessary burden of proof upon direct costing as a prerequisite to belief and acceptance. It should be sufficient to establish that it is another basis which is logical, sound, and can serve management well.

I cannot honestly subscribe to the hypothesis that absorption costing is inherently wrong or weak, in spite of some companies' obvious problems with it. I know of too many well-managed organizations which are getting what they need from a sound standard cost system using absorption costing, with flexible budgets and an economical level of clerical costs, in order to dismiss those methods completely. This may sound like heresy from a direct costing stand-

point, but I would like to follow this view just a little further. The concept of standards as summarized in the following way still forms the basic pattern for a good many companies:

1. Standards for material call out the amounts required, or material costs for which units of product can be made. Any excesses are waste or inefficiencies (variances) to be charged off immediately.
2. Standards for labor spell out the labor cost for which the products can be manufactured. Any costs above standard here (variances) will be recognized as a current period charge.
3. Standards for overhead based on practical budgets and "normal" production indicate the overhead cost for which we can fairly expect to operate. Any overhead costs beyond the standard will be recognized as current costs (variances) and will be reported as such.

The type of misunderstanding attributed to absorption costing might be twisted around a little and pointed toward direct costing. An example could be generated to show a company operating at a planned near normal production for several months. Production could be for a seasonal shipment pattern, with most of the orders on hand well in advance. In this instance, a hard-bitten production manager or president could object violently to high losses shown by writing off fixed costs and inventorying only variable ones. If management's thinking fits better with absorption costing, showing the bulk of production costs as an investment which will be turned for a profit in future periods, I do not see how we can say this is an unsound basis for accounting. However, my main point is that you do not have to prove that absorption costing is wrong in order to establish that direct costing is right.

Federal Taxation and Direct Costing

To set the perspective for discussion about Federal income tax aspects of direct costing let us begin with the Internal Revenue Code and work from it to specific cases. Section 471 of the code sets out the general rule for valuation of inventories and is a rather brief statement of principle, as follows:

> "Whenever in the opinion of the Secretary or his delegate the use of inventories is necessary in order to clearly determine the income of any taxpayer, inventories shall be taken by such taxpayer on such basis as the Secretary or his delegate may prescribe as conforming as nearly as may be practical to the best accounting practice in the trade or business and as most clearly reflecting the income."

As is well understood, the code itself makes no specific recommendations re-

garding acceptable procedures for presentation of inventories for tax purposes but defers this decision to best accounting practices, which must be interpreted through the workings of the commission's regulations and of court decisions.

In considering the matter here, it may first be noted that the element of consistent practice dominates all other considerations in the history of Federal tax law administration. This consistency doctrine has been very wisely selected as of primary importance and, in at least some instances, has given an opportunity for the direct costing basis to be successfully defended. The Federal Tax Court case of the Geometric Stamping Co., decision on which was handed down in 1956, represents for the moment one of the best landmarks or footholds for acceptability of this principle. The facts of the case, in brief, are that the company changed to a direct costing method of reporting its income for the taxable year of 1948. The commissioner, having reviewed the company's returns for several consecutive years, made no adjustments. It was not until 1952 that his representatives advised the company that a recomputation of income had been made reversing the prior tacit acceptance of the direct costing method. The opinion rendered by the judge illustrates clearly the force of reliance upon the element of consistency. That opinion and some of the wording used are well worth noting here. Some of the key phrases follow:

> "The rule for determination in a case such as this is not so much that there is a duty of consistency resting upon the Commissioner, as that there must be some recognition that the Commissioner's own regulations require consistent treatment by the taxpayer. Where there is a choice of alternative methods of treatment and no suggestion that the method adopted is not permissible from an accounting standpoint, consistency of treatment can be of great significance as demonstrating that the method used clearly reflects income. We think it should follow that the Commissioner ought to take account of the extent to which a taxpayer's conduct conforms to the Commissioner's own requirements.
>
> "That the company changed its method of reporting, that this change was brought to the attention of the Commissioner's representatives, and that they gave the procedure their tacit approval is reasonably clear from this record. That would be the equivalent and have the effect of a formal request on the part of the company to change its method of reporting and a formal approval by the Commissioner of that change. It is noteworthy that the Commissioner never contests the propriety of the direct costing method as such. That question is not raised in this proceeding and we do not reach it. We think the conclusion inescapable that as to 1948 the Commissioner's approval was tacitly requested and effectively given for the change in reporting

methods. By 1950, the year now before us, the new method had been uniformly followed by the company for 5 years, and by 1955 when the method had been in use for 10 years taxable income was greater in 5 years and less in the other 5 years under the one method than it would have been under the other. The consistency required of taxpayers in reporting of income and the uniformity shown by the company consequently results, as is so often the case, in the long range consequences being no different under one system than under the other. This is at once the theoretical reason and a practical demonstration of the superior significance of consistency where permissable alternatives are involved.

"For the reason, therefore, that what amounted to a request for a change in method of reporting was submitted to and granted by the Commissioner, we can conclude that the company's method of reporting in the year in controversy was proper."

So here is one clear cut case in which a company changed to direct costing without requesting permission in advance. In this particular instance, the company was successful and the court finding now places them in a very enviable position. This demonstrates at least one possible avenue for successfully adopting direct costing for Federal income tax.

Now let us examine the second method or approach for accomplishing this change, namely, that of specifically applying to the commissioner for permission to change. A case in point involves another company which reached the opinion in 1954 that it wanted direct costing for Federal income tax purposes. Application was made by letter to the Commissioner of Internal Revenue in the form shown in Exhibit 1. The reply granting permission and the specific conditions imposed may be of interest, so that the letter has been included as Exhibit 2. The company accepted a 10-year amortization of the tax difference resulting from the change and, more than that, adopted direct costing for all external reporting, including S.E.C. filings, from that day forward. In the year of change, two references to it were required in the auditor's report. One appeared in the annual report in the form of a footnote to the consolidated financial statement as follows:

"As of December 31, 1953, the companies revised their method of charging manufacturing expenses to inventories. Under the new method certain fixed manufacturing expenses are not absorbed in the inventories but are charged directly to cost of sales. This change reduced the 1953 net income and the inventories at December 31, 1953 approximately $————."

The second reference was in the independent accountant's opinion and is as shown below:

"The accompanying statement of financial position and statement of

LETTER REQUESTING CHANGE

March 30, 1954

Dear Sir:

Application is hereby made for consent to change method of accounting, with respect to the method of allocating overhead to inventory; that is, from a percentage method of allocation to a direct cost method of allocation beginning with the year 1954.

The following information is submitted:

1. Name and address:

2. Nature of business:

3. Date incorporated:

4. Date last return filed:

5. Return for 1953 will be filed on or about _____.

6. Nature of inventory:

7. Value of inventory using percentage method_____.
   Value of inventory using direct cost method_____.

8. Adjusted net income reported for calendar year 1952_____.
   Federal income tax payable thereon_____.

9. Reason for change:

The history of the company reveals extreme fluctuation or variance in sales volume according to economic conditions. The change to direct costing will eliminate the volume variance and, therefore, measure more accurately the cost and income of operations. Since historical costs are used as a basis for determining the contract selling price, the direct cost accounting method will represent a more serviceable tool than heretofore.

10. Disposition of difference in inventory December 31, 1953:

Request is hereby made that the difference of $_____ between the two methods of allocating overhead in inventory at December 31, 1953 be allowed as a deduction in the income tax returns for 1954 and 1955 in equal amounts.

Yours very truly,

EXHIBIT 1

operations, and income invested in the business, present fairly the financial position of the company and subsidiary companies consolidated at December 31, 1953, and the results of their operation for the year then ended, in conformity with generally accepted accounting principles, which except for the change (of which we approve) in the method of stating inventories, described in Note 1 to the consolidated financial statements, have been applied on a basis consistent with that of the preceding year."

Since that year, there have been no comparable references, nor has any qualification been found necessary by the accountants. This is the more noteworthy because, as is the usual case, the method of pricing inventories must necessarily be adequately disclosed.

Here we have a second example, showing another possible way by which a

LETTER GRANTING PERMISSION April 25, 1954

Gentlemen:

This is in reply to your letter of March 30, 1954, in which you make application for permission to change the method of allocating overhead to inventory from a percentage method of allocation to a direct cost method of allocation beginning with the taxable year ending December 31, 1954.

It is indicated in your letter that the inventory as at December 31, 1953 valued by using the percentage method of allocating overhead was $ X and the value of inventory as at the same date using the direct cost method was $ Y .

The discretionary power of granting or denying applications for permission to change the basis of inventory valuations is vested in the Commissioner, and existing income tax regulations provide that permission to change the basis of inventory valuations will not be granted unless and until the taxpayer and the Commissioner agree to the terms and conditions under which the change will be effected.

Permission will be granted you under the facts presented to change your method of allocating overhead to inventories for Federal Income Tax purposes from the percentage method to the direct cost method beginning with the taxable year ending December 31, 1954, provided you irrevocably agree (1) that your opening inventory as at January 1, 1954 shall be valued by using the direct cost method of allocating overhead, (2) that the granting of permission for such change shall have no effect on income for prior years, and (3) that the direct cost method of allocating overhead shall be used in valuing inventories for all subsequent years unless permission is secured to change therefrom to another recognized method.

In effecting the change in method of valuing your inventories under the terms set forth herein, you may include as a deduction in the taxable year ending December 31, 1954, and each of the taxable years ending through December 31, 1963, one tenth of the amount which represents the excess of the value of your opening inventory as at January 1, 1954, computed under the method used by you for the taxable year ended December 31, 1953, over the value thereof required to be used under condition (1) above.

Final action on your application will be deferred pending the receipt of written advice from you as to whether the terms and conditions set forth herein are acceptable to you. The agreement to the terms set forth above should be signed with the corporate name and pen signature of the president, vice president, or other principal officer over his official title.

Yours very truly,

Chief, Corporation Tax Branch

EXHIBIT 2

company has been able to successfully change to direct costing for Federal income tax purposes. Admittedly, this case is not typical. Most requests have been denied, but there are other examples in which permission has been granted when it has been demonstrated that a better tax computation will result from the use of direct costing.

The Steps to Follow

Finally, let us come to a specific question. What are your chances of changing, if you wish to, from absorption costing to direct costing for all purposes? Right now, I would say they are pretty good if you are careful in the way you go about it and are not too impatient in trying to push the change through. This may sound like optimistic thinking, but enough in-roads have been made to demonstrate that it can be successfully accomplished in a good many instances. Hence, in concluding, I would like to take stock of the ways which seem to present the greatest opportunity for successfully accomplishing such a move. First, let us consider the chronological order in which it seems best to move ahead:

1. Get your internal reporting and conversion under way. This can be done without external approval or problems outside your own company.
2. Pick Federal taxation as the first avenue for external change. You will have to work carefully on this. You may try the change without seeking permission and be prepared to suffer the consequences if you are reversed. The second alternative is to request permission to make such a change. However, if you are denied, you may be set back for a considerable period of time.
3. Work on other aspects of external reporting last. If you can get through the taxation barrier, your auditor will have a better basis for arriving at an honest opinion and allowing you to go the rest of the way for stockholder reports and S.E.C. filings without serious qualifications.

Why do I put Federal taxation at the top of the list and ahead of other external reports, in the face of reports that the Internal Revenue Service is not looking formally on direct costing? My reasons are these:

1. More court cases will be coming out and the trend of acceptance will probably sway back and forth, but I think we can expect the direct costers to win as many as they will lose.
2. Problems involving inventory have not been substantial in number in Federal tax examinations over a long period of time.

Recently, in establishing background materials for a court case involving the application of overhead to inventories (this is not a direct costing case),

we had occasion to query eight of our offices located in concentrated large industrial centers regarding the frequency of tax problems with inventories. Only one of these offices has reported serious difficulties with the Internal Revenue Service in the pricing of overhead in inventories, in the last five years. A "serious difficulty" was defined as questions which were not reasonably easily resolved during early conferences. The one office reporting difficulties cited a company which had been consistently following a practice of excluding all overhead from inventory. Consequently, taking all these things into consideration, I think chances in the Federal taxation area present the most likely first target for seeking acceptance of direct costing.

Finally, we can benefit from some discussion about how a company can best go about the process to keep the odds in its favor. I mentioned earlier that the year of change presents some particular problems. Minimizing the impact of this change, i.e., trying to keep the dollar differences within bounds, will substantially improve a company's chances. Here are several guides:

1. Carefully select the year of change. Business conditions and the specific economic position of the company may vary considerably. Pick a year end when inventories are at a low point. It may even be helpful to change to a fiscal year end before making this move.
2. Exert every possible effort to work finished goods and work-in-process down to a bare minimum at the year end.
3. In sorting out fixed from variable costs in the initial application, give way towards the variable classification on border-line decisions. The company will not have to live with these exact definitions forever anyway. If it keeps the fixed costs to a minimum now to to get through the more difficult year of change, it will be able to sharpen up definitions and classifications in later years.
4. Establish that the company is having problems. This will necessitate putting pride in your hip pocket, because you will not be likely to get permission to change from one good method to another good method just because you would like to. Also, you have not much chance if you try to disprove the whole principle of absorption costing; it is too widely accepted. Establish that the company is having some particular problems with its present methods, problems which others are not necessarily experiencing, and that you propose to correct these problems through direct costing. Demonstrate that this will mean more adequate determination of income.

If you follow this program, first demonstrating the practical usefulness of direct costing in internal reports, then you may be successful, in the near future, in completely converting for external purposes as well. The course has been charted but still poses many obstacles.

Direct Costing — Will General Acceptance Follow Management Acceptance?

by RONALD E. DAVIS

ACCOUNTING THEORY is not static and is occasionally subject to controversy. One of the bitterest controversies waged in the past twenty years concerns the accounting concepts of costs, considered as outlays related to the production of goods, and expenses, considered as items which do not contribute to the value of goods in the manufacturing process. In the last two decades, a new concept, which defines costs as outlays which vary according to the volume of production and expenses as items which remain relatively fixed regardless of output, has gained some recognition. The purpose of this article is to determine whether this new concept, direct costing, has now risen to the status of meriting acceptance as a basis for external reporting.

Any judgment concerning the acceptability of accounting practices must consider at least four influences: management, the American Institute of Certified Public Accountants, the Securities and Exchange Commission and the Internal Revenue Service. A further problem is that acceptance by one of these is nearly always dependent on acceptance by the others. However, the impasse may not be as difficult as is thus suggested. If an increasing number of companies overcome their hesitancy and adopt direct costing for internal reporting purposes and so illustrate its operating usefulness and theoretical soundness, it may be considered probable that the Institute would soon accept direct costing. And, if direct costing obtains sanction of the independent public accountants, it would seem that the approbation of the Securities and Exchange Commission and the Internal Revenue Service would follow closely. This is particularly true at the present time when there is much discussion about reducing many of the dissimilarities existent between tax regulations and current accounting practice.

The factors considered in this article are those which would be deemed important if direct costing were to be accepted for external reporting.

What Is Direct Costing?

There are many and diverse definitions of what constitutes direct costing. They range from calling it an accounting technique to classifying it as a costing

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method or a concept of accounting. These divergent views demonstrate that direct costing is many things to many people. A simple definition, which is broad but at the same time penetrates into the heart of direct costing, is:

> Direct costing is a concept of accounting which recognizes the fundamental characteristics of costs. Costs are segregated as being either:
>
> 1. Direct costs, or product costs incurred because goods have been produced.
> 2. Indirect costs, or period costs incurred on account of being in business but the amount of which is independent of the volume of output.

This definition excels, for it imposes no major restrictions on direct costing and it is broad enough to allow for all its potential uses. The two most significant features are also presented. The first is that direct costing recognizes the basic characteristics of costs. Costs are either direct or indirect. They may also be called either product or period charges. Product costs are those associated with the units of output (material, labor and variable overhead) and are charged to the product. Period costs are those associated with time and the provision of the capacity to produce. These costs are charged against revenues of the period, rather than being deferred in inventory, since they are not directly related to the product.

The other essential feature is that direct costing is a concept of accounting rather than a system like actual or predetermined costs or their versions under job order or process cost procedures. In brief, direct costing is not a system or a procedure to be substituted for historical or standard cost accounting and it may be utilized with either a job order or process cost procedure.

Direct costing is sometimes called variable costing. This might be a more appropriate name and its use undoubtedly would help elucidate some existing ambiguities. Confusion arises because of the varying interpretations given to direct costs by different individuals. Variable costing might be considered to describe more exactly what is meant.

Are Fixed Costs Period Costs?

When one questions the propriety of considering fixed costs as period costs, it is tantamount to questioning the acceptability of direct costing as a valid accounting procedure. If fixed expenses may be treated as period costs, then direct costing is based on sound logical foundations; if not, it is improper. The logic behind direct costing may be expressed by saying that, while variable costs repre-

sent management's decision to produce in the present period, fixed costs are incurred because of management's current or past decisions to maintain a potential to produce and sell a range of products in different volumes and markets.

So conceived, fixed expenses should not be included in inventory and so placed on the balance sheet, because they are incurred to put the business in the position of being ready to produce. They are not incurred to manufacture any specific quantity decided on for a particular period and they must be re-incurred each period quite apart from the level of production. Variable expenses are product costs because they are the current cost of producing now and are incurred only as production occurs.

Backers of the absorption costing system believe this contention to be erroneous. They consider fixed costs to contribute to production insofar as the capacity to produce is utilized. Fixed costs relating to idle capacity form the volume variance. They find no logical justification for the exclusion of fixed overhead from inventory. Depreciation is a common example used to support this position. It is frequently asked how depreciation can be treated as a period cost when it is chiefly caused by the wear and tear of use? This author does not consider depreciation to be a good example. The usual purpose of providing depreciation is to make periodic transfers of cost from the asset section to expense, not to take into account the effect of wear and tear. If it is desired to have depreciation fluctuate with volume, this is a different matter and it can always be so treated on the units of production method.

An example in point is the cost of interpretation of substitutions of process. In this era's ever-increasing swing toward automation, many manual operations are being replaced by machine operations. For instance, a $100,000 direct labor charge may be converted into a yearly $90,000 machine charge. Under absorption costing, a $10,000 decrease in production costs would be reflected in the accounts, whereas direct costing would reflect a $100,000 decrease in production costs, with period costs increased by $90,000. An adversary of direct costing may sincerely ask how a change from a man to a machine operation can be interpreted properly on the direct costs basis. The differing treatment under direct costing of labor and depreciation costs is also questioned by pointing out that the man and the machine are employed in the same operation. The product results from the union of the workman's skill and the machine's capabilities. Perhaps the usefulness of these examples is the disclosure that treatment of depreciation is availed of so frequently in argument. Again I would like to suggest, as in the previous paragraph, that the matter is less dependent upon the viewpoint toward direct costing as upon the viewpoint toward depreciation.

Another argument occasionally voiced is that fixed costs should not be excluded from inventory because, if there were none, no goods would be produced. However, if no selling expenses were incurred in endeavoring to sell the goods, there would be no economical reason to produce the goods and if there were no general and administrative expenses, probably no goods would be produced. Yet these expenses are not included in the inventory valuation even under absorption costing. There is also the contention that costs are not matched against revenue unless fixed costs are deferred in the inventory account until a future period when the merchandise is sold. Here we must simply rely on direct cost logic that fixed costs will be incurred whether or not goods are produced and that the conventional approach, in which profits vary in accordance with fluctuations in both production and sales, might lead to the belief that profits can be gained by simply increasing production.

This entire problem can always resolve itself into a deliberation of what is cost. The author believes that direct costing is based on logical grounds. The division of costs between fixed and variable seems to penetrate more deeply into their nature than any other. It must be recognized, though, that each method has its theoretical strengths and weaknesses.

How Does the Change Affect the Financial Statements?

Although direct costing's major objective is the presentation of a more factual and clearer picture of earnings, it does have the secondary effect of causing a reduction in inventory valuation equivalent to the amount of fixed costs which would be included if absorption costing were in use. This reduction in inventory is the major stumbling block in the path of direct costing's acceptance. In practically all arguments opposing direct costing, the reduction in inventory is assailed. In fact, the public accounting profession is thought to object to direct costing for just this very reason.

Actually, the reduction in inventory caused by direct costing is rather small. Being interested in this aspect of the problem, the author has prepared his own study to estimate the effect of the adoption of direct costing on American industry, in general. Statistical techniques were applied to the financial data of thirty large American corporations to approximate their fixed manufacturing costs for the year 1957. The amount of fixed cost contained in the 1957 inventories of these companies was determined and used to calculate the percentage reduction in inventory that would be caused by direct costing. The results of this study appear in the first column of Exhibit 1. The reductions range from 0.4 percent to 22.5 percent. The average reduction is 5.6 percent, while the median reduction is an even more impressive 5.25 percent.

EFFECTS OF DIRECT COSTING ON 30 SELECTED FINANCIAL STATEMENTS

Name of company	% Reduction in 1957 inventory	% Reduction in 1957 net income if adoption was in that year	% Difference in 1957 net income if regularly employed #
American Chain & Cable Company, Inc.	5.2%	22.3%	0.0%
American Distilling Company	2.4%	24.8%	4.0%
American Home Products Corporation	15.2%	20.2%	(1.3%)
American Sugar Refining Company	4.1%	10.6%	(0.5%)
American Tobacco Company	1.2%	14.6%	(0.3%)
Beaunit Mills, Inc.	5.5%	17.9%	(1.3%)
Coca-Cola Company	0.4%	0.5%	(0.5%)
Consolidated Cigar Corporation	1.5%	17.1%	1.0%
Corning Glass Works	5.0%	6.2%	(0.4%)
Dresser Industries, Inc.	5.2%	16.9%	(1.1%)
Electric Storage Battery Company	7.6%	42.0%	(1.4%)
General Baking Company	0.4%	1.1%	0.0%
General Foods Corporation	6.7%	26.5%	(5.1%)
Gillette Company	7.2%	5.5%	0.2%
H. J. Heinz Company	4.9%	45.5%	(4.1%)
International Harvester Company	5.9%	42.2%	(4.5%)
Masonite Corporation	7.1%	10.4%	(1.3%)
Mead Johnson & Company	22.5%	33.5%	(0.6%)
National Biscuit Company	5.4%	13.2%	0.0%
P. Lorillard Company	0.9%	13.2%	0.0%
Quaker Oats Company	8.2%	20.5%	1.2%
Rohm & Haas Company	7.5%	12.5%	(0.7%)
Standards Brands Incorporated	6.3%	30.6%	5.6%
Sunshine Biscuits, Inc.	2.7%	4.9%	0.1%
Thompson Products, Inc.	4.9%	23.9%	11.1%
Timken Roller Bearing Company	8.8%	23.7%	(2.1%)
United States Pipe & Foundry Company	6.6%	20.0%	(4.5%)
Vanadium Corporation of America	1.9%	10.3%	(4.8%)
Wm. Wrigley, Jr. Company	1.1%	2.8%	0.1%
Worthington Corporation	5.3%	33.6%	1.1%
Totals	167.6%	567.0%	58.5% *
Averages (Totals ÷ 30)	5.6%	18.9%	2.0%

Both opening and closing inventory on direct costing basis.

* Added without regard to plus or minus sign. Minuses or decreases are denoted by being bracketed.

Notes: The percentages for fixed cost in inventory are derived from fixed overhead estimated by applying the least-squares method of the cost data (relative to change with volume) of each company for a seven-year period. Companies employing the "lifo" basis of valuing in-process or finished goods, in whole or in part are not included. The seven-year period was employed so that a reasonably accurate relationship between fixed and variable costs could be established. Although the results obtained for each individual company may not be precise, the figures, viewed as a whole, provide an indication of how direct costing would affect American industry.

EXHIBIT 1

A reduction in inventory of this minor size would seem to have very little effect on any users of the balance sheet. The interests of the Government, unions, and the public at large would not be affected. For them, the question is not vital. Certainly, stockholders are affected only because the decrease in inventory is matched by a corresponding decrease in retained earnings. However, ordinarily, this effect is immaterial because any fixed costs in inventory are minute when compared with retained earnings. As to management, no adverse effects would result; rather, three advantages would accrue. First, management can have more confidence in the inventory figure under direct costing because it is computed on a reliable basis. The inventory valuation is not subjected to the guesswork of many arbitrary allocations and the cost of each article is the same, whether the firm produces at 75 percent or 110 percent of capacity. Second, other accounting techniques become simplified, such as ascertaining the cash flow of the business or preparing a statement of the source and application of funds. Third, a greater understanding of costs can be achieved. Popular misconceptions, such as regarding depreciation as a source of working capital, might be clarified.

The most significant adverse effect of the reduction in inventory consequent of elimination of fixed overhead from values is that it results in a reduction in what is considered to be the working capital of the business. This necessarily affects the relationship of the business with its creditors. Disadvantages result because, at first glance, the firm would appear to be in a worse financial position. Actually, the firm's position has not been weakened. As a result, creditors would have to be educated so they realize that the difference has been created only by a modification in accounting procedure. And it might be realized, too, that, on a closer look, the working capital of the business is shown in truer perspective. Variable costs are the only production costs which demand current management decision in respect to working capital. Fixed costs are more closely associated with the passage of time than with the manufacture of goods and, in the short run, are not altered by management because of fluctuations in the volume of production. Therefore, only variable costs represent the working capital actually deposited in the inventory account.

In the initial year of change to direct costing, profits are reduced because costs are increased by the amount of fixed costs which would have been deferred in the closing inventory account under conventional methods. Thereafter, reported profits may be either higher or lower. Under absorption costing, profits vary according to fluctuations in both production and sales, whereas under direct costing, profits are dependent on sales volume (and related cost performance).

The study undertaken by the author was continued to determine the effect of direct costing on reported profits. Two sets of percentages were computed and appear along with the inventory reduction percentages in Exhibit 1. The first set (middle column) denotes the reduction in 1957 net income if these thirty companies had adopted direct costing in that year. (The dollar amount of the reduction is equal to the fixed costs included in closing inventory.) These reductions range from 0.5 percent to 45.5 percent. The average reduction is 18.9 percent, while the median reduction is 17.5 percent. The percentages demonstrate that direct costing results in a substantial reduction in profits in the year of its adoption. However, the argument levelled against direct costing for this reason is practical rather than theoretical and a footnote attached to the income statement would fully explain the cause of the decrease to its users. It would be necessary to maintain some comparability among annual reports.

The second set of percentages (final column) shows the differences between the absorption costing profit figure and the direct costing profit figure, if these firms had put direct costing in regular use before 1957. It was necessary to compute the fixed costs contained in the 1956 inventory (opening 1957 inventory), because the dollar amount of the difference in profit is equal to the change of fixed cost in inventory which would have occurred if conventional methods were still in use. Disregarding the positive or negative attributes of the differences, the variations range from no difference at all to a difference of 11.1 percent. Again disregarding increases or decreases, the average difference in reported profits is 2.0 percent, and the median difference is a mere 1.1 percent. Since no significant differences result as between the net incomes reported by the two methods, any accusations that direct costing causes exaggerations in the profit and loss variations of a business should be discounted. Also, over several fiscal periods the income differences between the two methods will be diminished even more because production and sales tend to balance out in the long run.

The Benefits of Direct Costing Income Statements

Particularly in view of the minor differences in the amount of income, the advantages to be derived by the users of the income statement, especially management, would be great. The major advantage of a direct costing system is that it provides information about the cost-volume-profit relationship. It would be no exaggeration to say that the decisions of many executives on vital matters are often inaccurate due to a lack of proper understanding and knowledge of fixed and variable expenses. Direct costing is beneficial because it can show,

by use of this information, what will happen, as well as what has happened. The accountant, in addition to simply reporting accurately the results of operations, is now charged with the responsibility of determining what will be the result of any action taken. Instead of merely analyzing and criticizing what has already occurred, he is now in a position to analyze the relative merits of proposals before decisions are reached. The same information on cost-volume-profit relationships can be secured under an absorption costing system, but an arduous task of separation is required.

In addition to specific decisions, direct costing aids profit planning, since the necessary data is readily obtainable from the regular financial statements. It likewise enables management to select objectives realistically and then make decisions with confidence that the objectives will be attained. The making of profits is one of the primary objectives of any business. Under direct costing, profit is meticulously planned in advance. It is never thought of as some indeterminate result which arises as a left-over at the end of a fiscal period. The separation of fixed and variable costs furnishes all the requirements for successful profit planning by establishing budgets for period costs and delineating the profit-making power of various products, processes, territories, etc.

Further in this connection the marginal income figure which direct costing provides pinpoints the areas where management efforts should be concentrated and where unprofitable items should be eliminated. This is especially true when output has reached near-capacity levels. Careful selection from among alternate courses of action in these circumstances results in a maximization of profits.

Another benefit derived from direct costing lies in the field of cost control because the method gives formal expression to the analysis of costs according to lines of responsibility. Fixed costs are no longer classified by departments or by function but by item of expense. This permits the assignment of responsibility for their reduction or control to some individual.

One of the advantages most strongly claimed for direct costing is that it comports with general management concepts and beliefs. Although management is capable of understanding absorption costing, the point to be emphasized is that costs and profits determined under it do not always react in the manner management believes they should. This is true because the conventional profit figure is dependent upon both sales and production and an increase in sales could result in a decrease in profits, or vice-versa. Management tends to place more reliance in the direct costing profit figure which is dependent on sales alone.

The Pricing Problem

Direct costing is not without its perplexities to management. It is charged that direct costing concentrates too much on the short run and leads to a neglect of the necessity to recover fixed costs in the long run. It is maintained that full product costs must always be compiled if long-range pricing policy is to be unimpaired. Direct costers retort that selling prices are rarely established on the basis of product cost estimates prepared by the accountant and that the most important factors in price setting are market demand and competition. Still others take different ground and assert that better selling prices can be determined under direct costing techniques. Costs are recovered by selling numerous products which make varying contributions toward overhead and profit. Since unit variable costs bear a constant relationship to unit selling price, the best selling price for a product is the one which, multiplied by the expected volume, yields the largest contribution toward period costs and profit.

Practical Application of Direct Costing

In an investigation of direct costing, there is a key question. Is it possible for direct costing to be practically applied? Many authors have written articles concerning the fixed-variable concept and the limitations involved in making cost classifications to these categories. Some authors have gone so far as to declare that any such segregation is impracticable. Theoretically, the partition is simple but it is very difficult to make. Even if a segregation of fixed and variable costs is accomplished at one level of management, problems still exist when the figures are transferred to another level. For example, costs treated as fixed on the divisional level, because they are uncontrollable to division managers, may be entirely controllable with volume at the over-all top management level.

If costs varied because of fluctuations in volume alone, the fixed-variable relationship could be established rather easily. Statistical correlations are usually poor, though, because such variations are caused by numerous factors in addition to volume. For this reason, many proponents of direct costing have advanced the suggestion that the variable cost group be considered as comprising all costs which would be eliminated if the business were shut down. However, this solution does not resolve all problems. How long should the shut-down period be? The minimum costs of remaining in business during a temporary discontinuance of operations for only a week or a month will be high compared to those of a shut-down for a year's duration or more. Attempted solutions to this problem advance the answer that the hypothetical shut-down be commensurate to the period covered by the financial statements.

Other procedures are also employed to effect cost separation by behavior. Many companies apply statistical methods to the cost data, such as the least-squares test, profit-volume chart or scatter graph, but these serve as a measure of past performance and not as an absolute guide to future results. In some firms, industrial engineers make a detailed investigation of costs in order to determine what the true theoretical relationship between costs and volume is. These men conclude how costs should react in the future. Their solution is not influenced by historical cost data. Careful preparation and judicious analysis of flexible budgets by accountants also serve as a valuable tool for breaking down costs into fixed and variable segments.

However, direct costing should not be abandoned or even disparaged simply because costs are not easily and precisely split into fixed and variable components. Authors who have suggested that this segregation is impracticable should be discounted. One has only to scan the overwhelming mass of writings about direct costing to discover that this division has been made reasonably in the past and is continuing to be made.

Another problem arises when an endeavor is made to allocate fixed expenses in the compilation of profit and loss statements by product lines. It must be remembered that one of the advantages of direct costing is that it avoids the allocations which necessarily accompany conventional methods. The problem can be resolved somewhat by distributing fixed costs among the different product lines on the same basis as other period costs, perhaps as a percentage of gross sales. This process will not completely eliminate all problems, but none will be of the significant nature that some opponents of direct costing suggest.

Direct costing may be considered to be more advantageous in use than absorption costing because of the simplicity of its computation. This is due to the elimination of the allocation of fixed burden. However, although simplicity may seem to be an important advantage, especially since the accounting function is performed at such a large cost, it should never be promoted as the sole justification for adopting direct costing. The important matter is whether data prepared under direct costing possesses more value to interested parties than data prepared under conventional methods.

Progressive Acceptance of Direct Costing — Time to Complete It

Logical arguments emphasizing the soundness of the direct costing concept will be to no avail if industrial accountants are unable to develop accounting practices and procedures for its practical application. Its use for internal reporting purposes must convince accountants and other members of management that it provides better cost data for the purposes for which costs are used.

The only true measure of management acceptance is the number of enterprises which have adopted direct costing, in one form or another, for internal reporting. James S. Earley has reported the results of an empirical investigation which he conducted to ascertain the extent to which marginal principles are employed by American industry.[1] For the basis of his survey, he used manufacturing firms rated as "excellently managed" by the American Institute of Management. Mr. Earley's study revealed that these companies overwhelmingly adhered to the practice of making variable-fixed cost breakdowns available to management for planning and decision-making purposes. Moreover, in the majority of cases, such breakdowns were extended to provide the same information by the individual functions of the business and by major products and product groupings.

These facts are significant when considering the acceptability of direct costing. Many firms have already incorporated direct costing procedures into their accounting systems, whether they call it such or not. Other companies, which use marginal techniques for the preparation of internal reports, would benefit from the adoption of direct costing because their accounting system would be integrated with their reporting system, and the additional step of segregation would be eliminated. In principle, the acceptance of the direct costing concept has already been demonstrated by American industry.

It is the author's opinion that the time is ripe for the public accounting profession to add its acceptance to that of management and to recognize direct costing for external reporting. The advantages accruing from direct costing's use overhelmingly outweigh any disadvantages which arise. It reasonably and adequately measures a company's financial position and the results of its operations. This acceptance should, it seems natural to suggest, accompany a definition of costs as items incurred because goods have been produced. These variable items can be measured on a unit basis with a considerable degree of accuracy and render unnecessary arguments concerning the logic of any method of allocation. Expenses should be those items which are associated with the expiration of time and place the firm in the position of being ready to produce. These items are relatively fixed and are incurred whether production be at a high or low volume. These definitions would constitute an advance in accounting theory by distinguishing between costs and expenses on the basis of a fundamental characteristic.

Once the accounting profession gives its approval to direct costing, it is probable that the concept will gain the recognition of the Treasury Department and the Securities and Exchange Commission. When this chain of events is completed, direct costing will be a fully acceptable procedure for external reporting.

[1] Earley, James S., "Marginal Policies of 'Excellently Managed' Companies," *The American Economic Review*, March 1956.

Professional Standing for Nonpublic Accountants?

by ROBERT E. SCHLOSSER*

IT SEEMS a bit unrealistic for well-educated men to maintain that professional standing or recognition be given only to accountants who are successful candidates for the degree of Certified Public Accountant. The accountancy profession should not be limited in this way. The qualified private accountant is as much a part of the accounting profession as is the C.P.A.

In considering the possibility of complementing the C.P.A. with the C.I.A. —Certified Industrial Accountant—several facts should not be overlooked. The American Institute of C.P.A.'s is the primary advocate of uniform accounting terminology; it has fostered research into the areas of accounting principles and procedures; and, because of the unique position of its practicing members as auditors rendering their extremely respected "opinions", the Institute has been able to give high standing to its pronouncements. C.P.A.'s in effect have been the leaders and spokesmen of the accountancy profession. There is little, however, to substantiate a claim that the independent C.P.A. be considered the only professional accountant. The writer does not believe the independence is the primary prerequisite for professional standing in any profession although, in accounting, it must be a prerequisite for the public practitioner.

In order to take their rightful place in the profession of accountancy as a partner with the C.P.A., private accountants must also establish standards of excellence in scholarship and experience. It is the writer's opinion that the uniform C.P.A. examination fairly tests scholarship for students pointed toward public practice. It is also true that most states require some type of apprenticeship to enable the candidate to qualify on the score of experience. It is my belief that a uniform examination could be developed and suitable experience requirements be adopted to test the competence of candidates desiring to enter the nonpublic side of the accountancy profession. It should not be difficult to select problems, questions and cases specifically designed to test the scholarship of "C.I.A." candidates. Budgeting, accounting systems and procedures, cost control and reporting, and problems of corporation finance—these are all subjects which the examination should include. Less emphasis should be placed on financial statement theory, ethics, external auditing practice, etc. which are more important areas of knowledge for the practicing C.P.A.'s. The most difficult part of the program would be the establishment of equitable experience requirements. This problem has been worked out by various states for the degree of C.P.A. and it is the writer's opinion that a proper solution can be worked out for professional nonpublic accountants.

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The Urgent Need for Accounting Reforms

by ALBERT J. BOWS

SINCE the National Association of Accountants adopted its new name to indicate its wider interest in accounting for business management, it is appropriate that all its members give serious consideration to accounting reforms which are needed today.

There are really two types of accounting. Most members of NAA are primarily interested in internal accounting for their managements. Internal accounting must be flexible and geared to the particular management and business, and should be subject to constant changes to meet their needs.

The internal accountant should also have a real interest in the external reports issued by his company to the public, because if external accounting is not on a sound basis, then all accounting and accountants will suffer. Today we must realize that external accounting rules are full of alternatives and indecisive thinking. So the certified public accountants who have the responsibility for seeing that external statements conform with so-called "generally accepted principles of accounting" are seeking your help to try to straighten out the external reporting. We feel that if this is straightened out, it will also help lead management into many sounder decisions in internal reporting because internal accountants have a substantial influence on management's thinking. As a simple illustration, the rules covering the external reporting of pension costs are so flexible today that a business may or may not provide for its real pension obligations in its financial statements. If they have not provided for them, it may be that these costs are also not really recognized on the internal reporting statements. This is why we need the help of internal accountants and why there may be some benefits to them from cooperation.

An Illustration—Identical Facts, Different Earnings

In order to illustrate the problem, Exhibit 1 shows a comparison of the earnings of Company A and Company B. To make the problem clear, let us assume these companies are aggressive competitors, in exactly the same line of business,

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COMPARATIVE EARNINGS STATEMENT

		COMPANY B's PROFITS ARE HIGHER BECAUSE OF					
	Company A Col. 1	Use of Straight-Line Depreciation Col. 2	Use of Stock Options for Incentive Col. 3	Use of FIFO in Pricing Inventory Col. 4	Earnings Not Charged With Deferred Taxes Col. 5	Including Capital Gain in Income Col. 6	Company B Col. 7
Sales in units	10,000 units						10,000 units
	@ $1,000						@ $1,000
Sales	$10,000,000						$10,000,000
Cost of sales	6,000,000						6,000,000
Gross profit before depreciation	$ 4,000,000						$ 4,000,000
Selling, general and administrative expenses	$ 2,500,000						$ 2,500,000
Depreciation	300,000	*$100,000*					200,000
Officers' compensation—							
Base salary	100,000						100,000
Cash bonuses	200,000		*$800,000*				—
LIFO inventory reserve	300,000			*$300,000*			—
	$ 3,400,000	*$100,000*	*$800,000*	*$300,000*			$ 2,800,000
Profit before taxes	$ 600,000	$100,000	$200,000	$300,000			$ 1,200,000
Income taxes	300,000	50,000	100,000	150,000	*$50,000*		550,000
	$ 300,000	$ 50,000	$100,000	$150,000	$50,000		$ 650,000
Gain on sale of facilities	—	—	—	—	—	$180,000	180,000
Net profit	$ 300,000	$ 50,000	$100,000	$150,000	$50,000	$180,000	$ 830,000
Capital stock, 600,000 shares	$ 6,000,000						$ 6,000,000
Return on capital stock	5%						13.9%
Per share	$ .50						$ 1.38
Market value—15 times earnings	$7.50						$20.70
Market value	$ 4,500,000						$12,420,000

Italic Type Denotes Deduction

EFFECT OF DIFFERENCES IN REPORTING EARNINGS ON COST OF ACQUIRING COMPANY C

	Company C
Asking price	$1,000,000
Net assets	500,000
Shares needed for exchange—	
Company B's shares @ $20.70 a share	48,300
Company A's shares @ $7.50 a share	133,300
In terms original 600,000 shares—	
Company B	8.1%
Company A	22.2%

EXHIBIT 1

have exactly the same number of officers and employees, and are selling the same product. In fact, so that the issues at stake are clearly defined, let us agree that each of the companies actually sold 10,000 units of its products at $1,000 a unit. Thus each of them had $10,000,000 in sales and each of them had the identical actual economic costs of operation. That is, they both operated the same number of hours, had identical facilities, and were subject to the same local and state taxes. These companies are, for all practical purposes, identical business twins.

Now, let us see how accountants can take two identical actual economic results of operations and change them into two entirely different earnings statements. We shall assume one difference between the companies—the management of Company A is conservative—it desires for its reports and financial condition to be on the conservative side so that it can build a good impression with banks and the financial public. The management of Company B is more promotional minded. It knows how few investors really understand the sophisticated distinctions of accounting. To Company B the most important figure in judging the results of a company is the reported earnings per share. Company B's management has decided to do everything possible to bolster the reported earnings per share. It is interested in that *last line* on the earnings report—it is not concerned about footnotes.

High Earnings Pay Off in Acquisitions

B's management also has another very good business reason for doing this. B had decided to acquire other companies. B knows, in making deals to acquire other companies, how attractive it is to exchange B's stock for the seller's stock in such a way as to avoid capital gains taxes by the seller. The more B can bolster the value of its stock, the fewer shares it will take to acquire other companies. And B knows the value of its stock is frequently measured by the reported earnings per share.

Let us get down to the accounting niceties and see what B can do. Notice, on the exhibit, that the sales of each company are $10,000,000, that the cost of sales for each is $6,000,000, that the selling, general and administrative expenses of each are $2,500,000. So far—no differences in the reporting techniques of the two companies. So far—the accountants are together.

Depreciation—Fast or Slow?

The first item of difference is in the method of handling depreciation (Column 2 of exhibit). To be conservative, Company A decided to take double-declining, or "fast," depreciation on its physical assets both on its books and in reporting its income taxes. Company B decided not to reduce earnings and, therefore, it takes straight-line depreciation on its books. However, to conserve cash, B decided to use double-declining depreciation in reporting its income taxes. Company B thus improved its reported earnings (before taxes) in relation to Company A on depreciation alone by $100,000 and without considering a tax

angle which will be discussed later. Accountants will accept either fast or slow depreciation.

Officers' Bonuses—Charge to Expense?

Company A decided to pay its officers on a scale competitive with other companies. Its entire compensation plan is based on salary and cash bonuses. The bonuses were $200,000 for the year. Company B, on the other hand, adopted a restrictive stock option plan for its officers. This means that the officers have an option to buy the Company's stock at a fixed price. If the stock goes up in value, the option is valuable and, if the stock is sold, the officers pay only capital gains on their profits instead of ordinary income taxes, assuming, of course, that the stock was held the necessary six months. The officers of B were willing to accept this plan because they figured they would get just as much compensation as if they had gone with a company like A, yet their over-all tax rate would be lower. In fact, to make the illustration more effective, let us assume that by the end of the year the value of the stock in B had gone up by $200,000. The officers could exercise those options and receive the additional $200,000 which would put them on the same basis as Company A (Column 3 of exhibit). However, there is no accounting requirement under generally accepted accounting principles, for Company B to record the increase in value of options granted to its officers.

Obviously, one reason why a person will go with a corporation with a stock option plan is that he hopes that the market value of the stock will go up and his option will increase in value. He is willing to take less cash compensation because of this attraction. However, the accounting rule states that the date on which to figure the cost of the compensation to the officer is the date the option is *granted*. This is practically a meaningless rule, because usually the option is worth only 5% on the grant date in order to qualify for tax benefits.

The moral here is rather simple. If you want to avoid having high compensation charged against your earnings, adopt a stock option plan. With such a plan you can dilute the shareholders' interest under the accounting rules, without showing any real cost to shareholders. There are honest differences of opinion on a subject like this. Seven years ago the American Institute of Certified Public Accountants put out its latest rule on this subject. Before that, it had another rule which required the option to be valued at the date the option right became the property of the grantee. Is it sound accounting for companies to grant the officers stock options at prices below market value in order to obtain their services without charging earnings for the cost of the compensation, as

measured by the value of the option? This is exactly what can be done under today's rules.

The above illustration shows that Company B has a free ride on stock options so it is having a much better year than A, because we now have $100,000 difference in depreciation and $200,000 difference in officers' compensation, although both have the same facilities and the same number of officers.

"Lifo" or "Fifo"?

Company A, being conservative, and desiring to take advantage of any legitimate tax deferral which might be available for it in view of the inflationary price structure in its industry, decided to adopt the "lifo" method of pricing its inventories. This method permits it to price its inventories at the end of the given year at the same inventory cost which existed at the beginning of the year. To accomplish this, Company A had to charge its income with a reserve of $300,000 for "lifo" inventory costs. By so doing, it avoids paying $150,000 in income taxes. Company B, on the other hand, decided that any such procedure as the adoption of a "lifo" inventory, while conservative and while saving tax dollars, would "hurt" its earnings in relation to its competitors. Therefore, it decided not to adopt "lifo" because of the effect on its earnings. Both methods of pricing inventories are acceptable to the accounting profession although, of course, here we now have another difference of $300,000 (before taxes) in the method of reporting income for the two companies (Column 4 of exhibit). Company B is really having a fine year!

We now have $600,000 difference! So Company A has a net profit before taxes of $600,000, and Company B has a profit before taxes of $1,200,000—all as a result of selling 10,000 units of the same product at the same sales price of $1,000 and with identical costs of operation.

Phantom Profits from Delayed Taxes

There is still one more little magical step to be performed by Company B. Let us say, for simplicity, that the income tax rate is exactly 50%, so Company A sets up $300,000 for its income taxes and reports its final earnings as $300,000. Company B should set up $600,000 for the taxes which ultimately will have to be paid on its reported earnings. However, if you will recall, B decided to take $300,000 of depreciation for income tax purposes but only $200,000 on the books. When a company takes fast depreciation for taxes and a lower rate on its books, it really has not "saved" any income taxes. It should provide

for the taxes it will finally have to pay. The only thing the company has done is to defer its tax bill to later years when it has less tax depreciation. After considerable argument in the accounting profession, and publishing rules which were later retracted, it was finally decided in American Institute of Certified Public Accountants Bulletin No. 44 (revised) that companies should provide for the future income taxes they have to pay in the years in which they cannot take depreciation for tax purposes, and when they will continue to charge depreciation on the books. But, as will be found in so many of the accounting rules, this one provides for the reserve *"except where there are special circumstances which may make such procedure inappropriate."* Company B decided that it had a special circumstance which would make such a procedure inappropriate and, therefore, wrote a footnote to comply with the requirement that differences between book and tax depreciation be disclosed. But Company B still did not charge its earnings for the deferred taxes (Column 5 of exhibit) and can report earnings of $650,000, since it actually only set up $550,000 for income taxes (the fast depreciation having cut its current tax bill by $50,000).

Phantom Profits from Lease-backs

During the year, both Company A and Company B decided to set up warehouse facilities in New York City to sell the same product. Company B decided it would be better to sell these facilities to a leasing company and then lease them back for twenty years. It made a deal which resulted in a so-called profit of $180,000. Actually, over the twenty-year lease, it will pay all this profit back and then some but, under the rules, this profit can be reported as a special item in the income account (Column 6 of exhibit), and most of the reporting services will not have the space to indicate the special nature of this item. Company A did not sell its facilities. Still, after all, the operations of the two companies remain identical from an economic standpoint. Our earnings spread is now $530,000! What a year for Company B!

The Stock Market Takes Over

Let us see what an active stock market would do to these reported earnings. Each of the companies originally issued 600,000 shares of stock. Company A's reported earnings now come out at $.50 a share and Company B's earnings reported in big bold type at a record of $1.38 a share.

The market price of stocks in the industry in which these companies are operating has a price-earnings ratio on the New York Stock Exchange of about 15 times. That is, if you will take the earnings of other companies in this industry, you will find that the market multiplies those earnings by about 15 in order to arrive at a market price. On this basis, we find Company A's securities are valued at only $7.50 ($.50 a share x 15) on the market and Company B's would be valued at $20.70. If we extend this by the original 600,000 shares of stock, we find that Company A is now valued on the market at $4,500,000, whereas Company B has a total market valuation, for all its shares, of $12,420,000.

Per Share Earnings Is the Key Figure

This example is not at all ridiculous except, in the sense that such widely differing results can be reached by acceptable methods of accounting. This kind of thing is going on every day! Practically any reputable firm of independent certified public accountants would give an unqualified certificate on either the income account of Company A or Company B with, of course, appropriate disclosures in the footnotes. However, the statistical reporting services do not have time or space to report all the footnotes. Most tabulations of earnings deal in earnings per share, and the average investor has neither the time, knowledge, nor inclination to look behind the figures. He is relying on the C.P.A.'s certificate.

The Cost of Being Conservative

What are the consequences of our "flexible" accounting rules? Assume that Company A and Company B decide to extend their markets and, since they happen to be identical business twins, they both decide to acquire another company. Assume that they have decided on Company C. The owners of Company C have an asking price of $1,000,000 for their Company, although their net assets are only $500,000 on their books. To match Company C's price of $1,000,000 in stock, Company B can issue 48,300 shares at its market price of $20.70 a share. Company A has to issue, obviously, almost three times the number of shares to match the price, or 133,300 of its shares. Therefore, Company B is enabled to acquire this Company by issuing only 8.1% additional stock, whereas Company A must issue over 22% to acquire C. Is this a fair price for being conservative? But this is the way the market works. This is

the way acquisitions work. And, unfortunately, this *is* the way accounting can be used.

Goodwill or Not?

There are other accounting ramifications that would be almost unbelievable, if they could not be so easily demonstrated. On this latest transaction, it is possible in the consolidated financial statements of either A or B to record Company C's assets at either $500,000 for the net assets acquired or for $1,000,000 based on the stock issued. Under the so-called pooling-of-interests method of accounting, the assets would be recorded at $500,000 even though $1,000,000 was the price! Under the so-called "purchase" theory, these assets could be recorded at $1,000,000. In the latter case, it would be necessary to set up some $500,000 of goodwill which, under the rules, *may* or *may not* have to be amortized against earnings. It is almost ridiculous to think that companies have to pay substantial amounts for the earnings of other companies and yet there is no real accounting requirement to force them to amortize these costs against the earnings they buy.

Open Door on Leases

Finally, let us look at another important area where lack of definitive accounting rules can result in penalties to conservative companies. The accounting rules for handling long-term leases on facilities are entirely different from the rules for borrowing money to buy facilities. In most cases it is cheaper to buy than to lease, but one reason many companies decide to lease is that there is no accounting requirement that the lease obligation be shown as long-term debt. Thus, the company that takes the cheaper route of borrowing and purchasing facilities can end up with more debt on the balance sheet than a company that has an even larger obligation under a lease. The reason for this is that the accounting profession has not yet decided that it is appropriate to put a lease obligation in the balance sheet of a company. If the company chose to borrow money and own the property rather than lease it, the obligation to borrow the money to buy the facilities would, of course, appear in the balance sheet. As you can see, for identical facilities with an identical life, we are accounting for them on the balance sheet in two entirely different ways. In the March-April, 1959 issue of the *Harvard Business Review,* Donald R. Gant has an excellent article entitled, "Illusion in Lease Financing." He reworks the balance sheets of major oil companies and chain grocery stores to show their fixed debt ratios. The results are startling!

Uniform Accounting Answers Needed

Many who read this article will come up with the proper time-honored questions: What do you propose to do about it? Isn't it a good thing to have differences?

Time is running out on us. If the public, labor unions, investors generally, and perhaps Congress really understand the great disparities in practice in accounting, we are bound to have rules, regulations and legislation to enforce uniformity upon us. Today, a large part of the investing public consists of people who are not trained in accounting matters and who are relying more than ever before on internal accountants and C.P.A.'s for reliable reporting of facts. If we are to keep our freedom, then we must come up with answers which can be applied uniformly. In deciding on our rules, we should stop having closed sessions of accounting committees and air all the reasons pro and con before deciding. Each accountant should participate actively in the decisions. The National Association of Accountants has a real responsibility to encourage its members to voice their opinions as to the methods that are appropriate and are based on underlying principles of accounting.

Otherwise sound business practices will lose. Obviously, just looking at the problem from a competitive standpoint, it is completely unfair for one company which is not realistic in its practices to take advantage of its competition by utilizing all the loopholes in the rules to obtain the highest reported earnings. Yet, if we do not shut the door, sound business practice will lose—because realistic management will be criticized if its earnings are not up to its competition. How long can the management of Company A stand by and let B's management make better deals for its shareholders? C.P.A.'s see time and time again examples of companies which have been realistic in their practices forced to adopt less conservative procedures to overcome stockholder or director criticism of reported earnings. As shown in the example used, the price of low earnings is so costly in terms of what it will do to the value of a company's stock and what it might do on deals to acquire other businesses that a company cannot quietly sit by and let its competitor take advantage of the situation.

Action Needed

The mechanics are all set up to take corrective action. The American Institute of Certified Public Accountants now has an Accounting Principles Board, and anyone who wants to be heard in his effort to foster sound external accounting can make his views known to this Board. What we need now is ac-

tion—action to get rid of the weasel words, action to think straight, and the courage to face the criticism we will get from those who like things the way they are. Many private accountants can and should participate in this effort to clear up external accounting reporting practices.

Our Lifeline Report

by RAYMOND F. LORD, JR.*

OUR TOOL for aiding and developing good judgment and, consequently, sound decisions is the Daily Chart. The prime purpose is overall control of inventory, cash and commitments. The secondary purpose is direction of sales, new orders, unfilled orders, accounts receivable and payrolls. All information is assembled on a daily basis. We have utilized a mimeo or spirit duplicated form containing all fixed descriptive information. The reports make the current information available to management by 11:00 a.m.

The natural source from which to present our open commitment position is the material or purchasing department. Through the simple calculation of adding to and subtracting from the beginning open balance the dollar value of open and completed purchase orders, our current balance is available. This report is routed to the general accounting section which, in a brief summary report, presents our current cash position and total liabilities, including open commitments. Our invoicing-order-writing departments supply the dollar value of new orders and, after deducting the previous day's sales from the accumulated balance, arrive at the new unfilled order backlog. This total of unfilled orders is the key in controlling or projecting our inventory needs, both in the factory and on the shelves, as our manufacturing cycle is a substantial length of time.

Last but not least, our accounts receivable section has readily available the total amount due us from trade sales, as well as the total of each day's sales.

Simple slide rule calculations give us a projected position in each area and measure our present activities against what we have done in the past. Without this report, many important decisions would be nothing more than experienced guesses.

* General Accounting Supervisor, B. A. Ballou & Co.

What the Contractor's Accountant Should Know About Surety Bonds

by JOSEPH H. BREUER

IN LARGE MEASURE the prosperity of our country has been and will continue to be dependent on increasing expenditures for capital goods, housing and public works. Spearheading the expansion of these expenditures is the construction industry. This industry has set impressive records of accomplishment and is constantly improving its techniques.

The Problem of Contractor's Failures

There are approximately five hundred thousand contracting firms in the nation. The rate of financial failure of these companies has often been as high as the rate of failures for all types of industry lumped together. The rate of failure would be considerably higher were it not for the use of surety bonds for almost all public works projects and for most private construction jobs. Some prime causes of failure of construction contracting firms are generally recognized as:

Taking on too much work.
Not enough capital.
Lack of experience.
Poor record keeping.
Poor planning.

The accountant who works for the contractor or a subcontractor must appreciate his role in preventing his employer's financial failure. The accountant for the owner of a new facility (and the owner's public accountants) should be aware of the losses his employer may encounter in the event the contractor defaults on his bid, and how such potential losses can be avoided. I believe it is important for all accountants to understand the role of the contract bond in the construction business.

Types of Contract or Surety Bonds

The bonded contract is primarily for the owner's protection. However, the strong interest of the bonding company in the success of the contractor keeps many a contractor in business. Contract (or surety) bonds are intended to pro-

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tect owners, contractors, subcontractors, and suppliers. They are relatively simple agreements including three parties: the principal (the contractor), the obligee (the owner), and the obligor (the surety). The bond rarely costs more than one per cent of the contract price. The cost of obtaining these bonds is included in the contractor's bid price. There are three principal types of bonds used in the construction industry. They are the bid bond, performance bond and payment bond. Exhibit 1 portrays general bonding relationships.

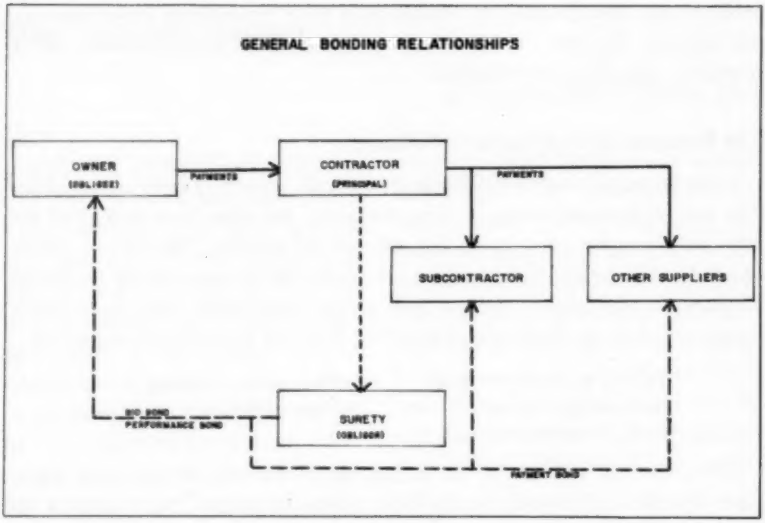

EXHIBIT 1

The bid bond is usually required in competitive bidding. It is intended to protect the owner in the event that the low bidder refuses or is unable to execute a final contract. The owner is enabled to recover the excess of the new low bid over the bid of the defaulting contractor, plus costs of re-advertising, re-engineering, etc., caused by the breach of contract. It also assures that the contractor, if awarded the contract, will execute performance and payment bonds. The performance bond guarantees that the contractor will discharge all of his obligations under the terms of the contract. If the contractor defaults, the surety is required to take over the burden of finishing the job. The bond covers whatever the contract covers. The plans, specifications and time allotted are made a part of the job. The labor and material payment bond guarantees that the contractor will pay his subcontractor and materials suppliers engaged on the project. It is

written in favor of the owner. This bond is for the benefit of anyone concerned with the project covered by the contract, who would legally have the right to file a lien against the project in the event of nonpayment.

Accountants are familiar with the many reasons why a business should have adequate accounting records: they are needed, for example, for management planning and control, tax and other governmental report preparation, and financial statements for credit grantors and investors. The construction industry has a special need for good accounting. This need arises out of the contractor's applications for surety bond coverage. The surety company needs to know what risk it is facing before it can insure the contractor's performance for each of his major projects. The financial information must be submitted by the contractor or his accountant. It is well to have the application supported by a recent balance sheet. The contractor's accountant and his system of accounts are, therefore, of special importance in the contracting business.

Surety Bond Applications and Evaluation of Risk

The financial information required by the surety company from the contractor usually includes the following information (Items 1 and 2 are exemplified in Exhibit 2):

1. Recent balance sheet, with supporting detail schedules for:
   a. Cash in bank: how much and which banks.
   b. Investment in stocks, bonds, etc., including extent pledged.
   c. Accounts receivable from completed contracts and anticipated date of collection.
   d. Earned estimates and retainage on uncompleted contracts, and how much has been paid to date by customers.
   e. Other accounts and notes receivable, with anticipated dates of payment.
   f. Equipment, including present encumbrances and monthly payments on them.
   g. Real estate, including re-sale value and amount of mortgage indebtedness.
   h. Notes payable and how secured.
   i. Amounts due subcontractors, including contract value, amounts earned by subcontractor to date, and payments to date.
   j. Accounts payable, with expected dates of payment.
2. Statement of earnings.
3. Statements regarding capitalization and ownership.

4. Statements regarding past performance, reputation, and credit standing.
5. Description of all insurance carried.
6. Name of principal subcontractors and suppliers.
7. Copy of complete contract bid proposal.

Contractor's Financial Statement to the Surety Company

Name .....

Business Address ..... (Street) ..... (City) ..... (State)

Statement of Assets and Liabilities as of ..... (Insert date. Otherwise statement will be returned), 19....

This statement must be made up by Applicant, his or its Bookkeeper. *Agents not allowed to do this.*

Cash in Bank (as per Schedule "A")			**Notes Payable** (as per Schedule "I")		
Cash on Hand			(a) To Banks Regular		
Certified Checks deposited with bids			(b) To Banks for Certified Checks		
Stocks, Bonds, etc. (as per Schedule "B")			(c) To Material Furnishers		
Accounts Receivable from completed contracts, including retainage and excluding claims not approved for payment (as per Schedule "C")			(d) To Others (exclusive of equipment)		
			Equipment Notes Due Within One Year (as per Schedule "G")		
Earned Estimates and Retainage on uncompleted contracts shown by Engineers' or Architects' estimates (as per Schedule "D")			**Owing Sub-Contractors,** Account of Retained Percentage, Earned Estimates and Work Performed and Unbilled (as per Schedule "J")		
Work Performed and Unbilled (as per Schedule "D")			**Accounts Payable** (as per Schedule "K")		
Other Accounts Receivable (as per Schedule "E")			(a) Not Past Due . . $		
Materials in Stock not included in any items above (present value)			(b) Past Due . . . $		
(a) Available for Contracts Under Way $			**Income Taxes**		
(b) Other Materials $			(a) Unpaid balance under Filed Returns		
Total Current Assets			(b) Estimated Reserve for Current Year		
			All Other Taxes and Accruals		
Notes Receivable (as per Schedule "F")			**Total Current Liabilities**		
Equipment at Book Value (as per Schedule "G")			**Equipment Notes Due After One Year** (as per Schedule "G")		
Real Estate (as per Schedule "H")			**Encumbrance on Real Estate** (as per Schedule "H")		
(a) Used for Business Value $			**All Other Liabilities**		
(b) Homestead . . . Value $					
(c) Held as Investment Value $			**Net Worth** (if an individual, or partnership)		
All Other Assets (explain fully for credit)			**Capital Stock** (paid up) if a corporation		
			Surplus and Undivided Profits		
Total Assets			**Total Liabilities**		

Statement of Earnings

For period beginning ....., 19....., and ending ....., 19.....

Gross Revenue		$
Direct Costs	$	
General and Administrative Expenses (including all depreciation)	$	$
Profit before Income Taxes		$
Federal and State Income Taxes Reserved and/or Paid on Above Profit		$
Net Profit		$
Dividends Paid $		

EXHIBIT 2

The information goes considerably beyond the usual bank credit inquiry for most businesses. At the time of the first bond application, the underwriter will require very detailed information about the business and the contractor's background. Thereafter, further information is expected to bring the underwriter's file up to date periodically. New applications will be requested annually and also prior to every large contract. The local agent will supply the underwriter in the home office with many types of background data, including newspaper clippings and photographs of projects. In the contracting business, the financial condition of the individual operator can change very rapidly.

In contrast with the usual emphasis on the income statement in financial reports, it will be noticed from Exhibit 2 that the typical bonding application devotes most of its space to the balance sheet and its supporting schedules. Only about five percent of the application form is concerned with a rather sketchy statement of earnings. The underwriter does recognize that the ability of a contractor is best measured by the money he has earned in that line of business. However, the reason for emphasis on the balance sheet is that the surety company is more concerned with the capacity of the applicant to perform against a new contract than with his past profitability.

To determine whether the contractor is a good risk for a bond the surety company will consider:

1. What type of bond does the contractor need?
2. Is the contractor's bid too low?
3. How will the contractor be paid?
4. Are the subcontractors qualified?
5. Does the contractor have sufficient working capital?
6. Has he done similar work successfully?
7. Does the contractor have too many jobs?
8. What is his reputation?

In common with other credit grantors, the surety analyzes the financial statements of the contractor and checks his credit standing with trade creditors. In addition, he checks the backlog of his present work and projects the contractor's total working capital requirements for the expected term of the new project. The surety's analyst is well-versed in the financial problems and pitfalls of the construction industry. He does rely on some key ratios in determining the acceptability of an application for a bond. The most commonly mentioned ratio is that the contractor can carry from fifteen to twenty dollars of uncompleted work for each dollar of net working capital. However, the anticipated profit or loss on the jobs included in the work in progress would affect the validity of this ratio. A series of substantial losses would adversely affect the working

capital ratio in short order. The analyst's decision is also influenced by the experience and reputation of the contractor.

In general, the decision to provide a bond is based upon a keen understanding of the contractor's finances and operations, rather than on mechanical applications of statistical relationships. The analyst wants the information which will assist him in looking behind and ahead of the figures on the balance sheet. A single figure for cash at the end of the period is not enough; an average month-end balance for the previous three months has greater significance. A cash forecast covering the period of the contract to be bonded is developed to show how the cash requirements of the particular contract will be covered when combined with the cash demands of the rest of the contractor's operations.

Receivables; Inventory; Equipment; Real Estate

Accounts receivable require a special detailed breakdown along the following lines:

1. Current earned estimates billed but unpaid.
2. Work completed and billable but not actually billed at the statement date.
3. Retainages earned and withheld; these will not be available until a specified period after completion and acceptance of the work.
4. Completed contracts—unpaid billings and retainages; this group should be aged and, where overdue, collectibility must be established.

Amounts due on completed (earned and billable) work must be based on architect and engineer estimates of percentage of completion of each project. Payment and retainage agreements with owner govern the due dates of these receivables. The speed with which construction in progress can be converted to cash is probably the most significant factor in the contractor's ability to pay his bills.

Other accounts receivable are evaluated. If insufficient information is provided, the analyst will deduct 15 percent for uncollectible accounts. This action may appear to be arbitrary, but it is understandable in the light of the analyst's responsibility in evaluating the contractor's financial statement. The accountant for the contractor must take his cue from this and make every effort to provide all the information which tell the complete story.

The value of materials in stock should be grouped in two categories: (1) materials available for contractors under way and (2) materials not presently usable for these contracts. Contractors will often purchase in excess of requirements

for a job in order to obtain the price advantage of a quantity discount, but it may be several years until a similar specification comes along. Aware of this, the surety analyst may arbitrarily reduce the valuation of this category of inventory by 50 percent. The surety company is also interested in learning whether or not the contractor has firm contracts for his material requirements. This would be of great significance in the event of a price rise or of a sudden material shortage. The importance of the material factor varies with the material-labor ratio of the type of work performed by the contractor.

One aspect of the equipment schedule portion of the bond application concerning the surety is a determination that the contractor owns the necessary equipment for his normal operations and, conversely, is not overloaded. If under-equipped for the job to be bonded, the contractor may commit himself to large payments on conditional sales contracts or to equipment leases which will drain his working capital. Some contractors, on the other hand, are chronically over-equipped because of their drive for lower costs within contract time limitations.

The contractor's cost estimates for the contract to be bonded should provide adequate provision for the cost of equipment rentals. In some cases, the analyst may go so far as to review the time schedules for putting the rented equipment to work to be sure that the contractor has given thought to planning for fully productive time for the equipment and its operators. The daily charge for such machinery and skilled labor is very high, though reasonable when related to their productive capacity.

As to indebtedness on equipment, the familiar accounting convention is that payments due within a year on obligations extending beyond a year from the statement date are considered to be current liabilities. This is often modified, with respect to a contractor's equipment purchase obligations, to a six-month or even a three-month period.

The logic of this modification is that the debt payments on equipment actually utilized on a construction job are to be reimbursed within the shorter period through progress payments. It is important to recognize that this treatment pertains only to equipment actually chargeable to a single project.

Real estate must be classified in the bonding application as to whether or not it is used in the business. In general, real estate is deemed to be a secondary asset which the surety can expect the contractor to fall back upon in case of unexpected working capital demands. A high equity in such an asset will sometimes impair the working capital position. Additional working capital might be provided by a long-term mortgage in an amount covering a large proportion of the value of the underlying asset.

Special Matters: Subcontractors; Low Bids

The contractor's relations with his subcontractors are an important aspect of the evaluation. The surety company's representatives will frequently canvass the industry to learn whether or not the contractor in question is highly regarded by the subcontractors. The latter want to work for contractors whose work schedules are carefully planned and executed to permit the subcontractor to operate his men and equipment effectively. Contractors who do not plan their work properly are poor risks for a contract bond.

Sometimes a schedule is requested from the contractor indicating the portion of the uncompleted work in each job which is to be performed by the subcontractors. This will reflect the proportion of the financial risk being borne by the subcontractors. Where the surety is not satisfied with the reputation or stability of a prospective subcontractor, the contractor may be requested to replace him with a more acceptable party.

In some instances, particularly where the contract completion dates are rather tight or the contract price provides a narrow profit margin, the surety may ask for a contract bond on the subcontractor. Some prime contractors bond all subcontractors about whom they have doubts.

Where possible, the surety will try to make comparisons with other bids on the job. If the low bidder is significantly below the other bidders, his cost estimates will be reviewed in detail to determine whether a gross error was made. If the low bid is based on error and the owner does not give permission to the contractor to withdraw his bid, the surety has a difficult decision to make. Should the surety accept a loss on the bid bond or should he take the risk of bonding the contractor for a loss job? As a practical matter, the surety looks to the contractor to make good, to the fullest extent of his resources, for any losses that may ensue. However, the surety wants to make the decision which will be least costly to the contractor, as well as afford the minimum risk to the surety company.

It is often quite difficult to convince a contractor that he does not have the organization and resources to take on a challenging big project. Also, the bankruptcy courts have seen many contractors who overextended themselves because they did not have the accounting records to provide them with the facts on time and properly interpreted.

Benefits Both Ways — and a Responsibility for the Accountant

The analytical work done by the surety company prior to acceptance of a bonding application will often save a contractor from failure. Filling out the

application form, answering the background questions, and preparing the financial statement provides the contractor with an objective assessment of his own business. Much of the information requested by the underwriter is directed toward ensuring that the contractor plans his engineering, operating, and financial affairs on a profitable basis. Under these circumstances, the successful contractor will give as much importance to his accounting requirements as to his productive forces. The opportunities for growth of a large proportion of the contractors would be well nigh impossible without the guarantees offered by the surety companies. The ability to take on progressively larger and more challenging projects is the best measurement of the individual contractor's growth.

The prime beneficiary of contract bonds is the owner who engages the contractor. The owner may be the Government, private industry, or an individual home owner. For a small cost he can be assured that:

1. The contractor will enter into a contract for the completion of the work, at the price quoted in his bid proposal.
2. The contractor will promptly and faithfully perform the contract.
3. Should the contractor fail in meeting the contract terms or get into financial difficulties, the owner can still get all that he purchased and at the same cost he agreed to pay.

The surety bond, then, assures the owner that the resources of the surety company are available to him to forestall any losses resulting from a defaulting contractor.

The use of contract bonds results in many benefits—to the owner, to the contractor, and to the subcontractor and suppliers. Realization of the benefits to the contractor depends in large part on information developed by his accounting department. Likewise, the owner looks to his management personnel, including his accounting department, to avoid surprise losses arising from contractor failures or lack of insurance against such failures.

A Simple Case of Clerical Simplification

by STANLEY MAX HUNT*

THE STORY you are about to "hear" is true. The moral of the story is that streamlining of your present procedures is possible. Major system overhauls may be fine, but do not use overhaul possibilities as excuses for not sharpening up clerical work and reports.

The story starts this way. One day our division general manager directed his controller to find out "if all the reports being issued are really necessary." Follow-up on this directive (expanded as a good controller would) resulted in clerical simplifications amounting to potential savings of around 110 clerical hours per month for our division containing 20 clerical people—potential, of course, because savings will not be realized unless payroll expense is eventually reduced or unless time saved is otherwise constructively utilized.

Our division has several scattered operations which are administratively controlled by a divisional office located in approximately the geographical center. Major operations are two soybean processing plants. A fair amount of the division accounting is integrated with other General Mills tabulating operations. (Examples are payrolls, expense listings, and final profit and loss results.) However, this story is about the "done-by-hand" accounting which was put under the magnifying glass by a divisional staff accountant.

The first area of attack was that of reports being issued by all departments. After carefully reviewing 170 major and minor reports, we made 25 changes of various types.

Reports were:	Number of changes	Monthly hours saved
Discontinued	4	5
Added	2	–3
Reinstated	1	–2
Simplified	15	20
Issued less frequently	2	39
Distributed better	1	–
Totals	25	59

We were surprised—pleasantly so—with these results. We had thought we had the report situation well in hand! The largest saving (39 hours monthly) was in the less frequent issuance of basic plant production reports. These (which combined inventories, production, and deliveries) had been issued daily for years. We found they could be issued three times weekly without sacrificing control or clerical accuracy. Some weekly labor reports showed labor productivity data which may have been interesting at one time but which certainly could not be used now to improve operations. Age-of-stock reports

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aged all stocks in detail when only very little data—90-day-old and off-grade stocks—were really useful. One special weekly plant report was discontinued because it duplicated part of another general report. The data was also currently available in the division office.

The movement was not, however, only in one direction. The survey disclosed that a basic quality control report had been "temporarily" discontinued without ever being reinstalled. In talking about the survey with the grain buyer, it was revealed that he could do a better job if he knew weekly sales margins. These weaknesses were corrected during the survey.

There was certainly nothing magical about the way the survey was conducted. We simply collected copies of the reports and found out who issued them, when they were issued, and who received copies. We then reviewed the reports with the people preparing them and receiving them. In our reviews we challenged usefulness through the following questions:

1. Is this report really needed?
2. Is all of it needed?
3. Is it needed as often as the report is now issued?
4. Can parts be combined with other reports?
5. Is the data needed in such formal fashion?

The second area of concentration was the checking done in the divisional office. We knew that a fair amount of divisional auditing was required to insure that: (1) general plant accounting was well handled, (2) information for hedging inventories and sales was accurate and (3) monthly profit forecasting could be confidently completed at any time during the month. However, we determined to find out what auditing the division office was actually doing and if it was really "buying us anything". Reviews were made of errors detected during the previous three months or so. Resulting simplifications included:

	Monthly hours saved
1. Test checking raw materials disbursement papers	10
2. Discontinuing mathematical check of plant material unloading recapitulations	9
3. Substitution of a monthly "balance sheet" for detailed checks of plant production and delivery reports issued three times weekly	5
4. Liberal spot checking of invoice extensions, rather than two checks, one at the plant and another in the division	5
Total	29

A third fertile field for improvement was the preparation of invoice journals. For years these had been prepared in the traditional sales journal way, with each invoice listed separately and then distributed to various money and product columns. Although we could not justify using tabulating

equipment for these journals (because of relatively few invoices per day), we believed the hand posted journals could be streamlined. They could and were. Here is the evidence:

	Monthly hours saved
1. Showing customer names on journals was discontinued	5
2. Delivery incomes were combined into one account rather than having three accounts	3
3. Invoice-by-invoice account distribution was dropped —daily money totals are now obtained from adding machine tapes	5
4. A complicated freight allowance column was eliminated by improving our product costing base point	3
Total	16

Some of these improvements seemed so obvious, once they were in working, that we wondered why old methods had persisted so long.

As a fourth field for time saving, we scrutinized our monthly closing schedules and installed these improvements:

	Monthly hours saved
1. Raw material prepaid freight computations changed from detailed calculations to use of average rates	3
2. Customer and vendor names discontinued on schedules of unfilled sales and purchases	2
3. Headings and product names pre-typed on inventory schedules	1
Total	6

Item No. 1 of this list was suggested by one of the plants and illustrates how probings for simplifications can stimulate people to bring forth their own recommendations.

Taking things as a whole, what did we learn? Well, we are still learning, but the following lessons stand as well-marked guideposts:

1. Records must actually be collected and studied and *then* reviewed with persons receiving and issuing them.
2. Suggestions for changes are more convincing and better accepted if thoroughly discussed with people affected.
3. Simplifications are possible without damaging internal controls.
4. Improvements are often chain reacting — one leads to another.
5. Changes should be followed up. (We conduct month-long work measurement studies one year and desk-by-desk instruction write-ups the next year.)
6. THE ONLY THING YOU SHOULD TAKE FOR GRANTED IS THAT NOTHING SHOULD BE TAKEN FOR GRANTED!

Getting More Mileage out of Cash

by SIDNEY M. ROBBINS

CASH—what a strange commodity! A business wants to get hold of it in the shortest time possible but to keep the least possible quantity on hand. Increased sophistication in the handling of cash has enabled companies to cut down on the balances needed to sustain any given level of operations. In 1948, for example, cash was about 19 percent of the total current assets of American corporations (excluding banks and insurance companies) while the same ratio was about 14 percent in 1959.

By being able to operate with less cash a company benefits in two principal ways. The increased turnover permits each dollar to earn more profits and, secondly, it reduces dependence on outside sources of financing. This second result is particularly important in a period such as the present, when interest rates are soaring and banks are examining loan applications with greater care. Tight money has much less bearing on a company which has discovered how to stretch the usefulness of each dollar that it has. In order to attain this end, companies have developed far-reaching programs of cash planning and control.

The Budgetary Base of Financial Controls

A solid base for a system of financial controls requires a cash budget, a capital expenditure budget, and a projection of the profit and loss statement and the balance sheet. Together, these documents provide a visual model of the outcomes of any given plan of operations, permitting management to make revisions without the pain of having to go through the actual operations. In this scheme of financial planning, the cash budget plays a major role by minimizing the possibility that a company will find itself confronted with unexpected cash requirements.

The considerations involved in preparing the budgetary base for controls cover the entire plan of operations for the business. Economical inventory quantities, warehouse locations of stocks, credit terms and the financing of sales,

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trade customs of payment, quantity discounts available on purchases, even collection psychology, all affect the cash budget. The well-recognized steps possible for hurrying the receipt of cash all have places in a scheme for increasing cash mileage, but there will also be pointed out here some less well-known techniques in cash handling which can contribute powerfully to the efficient use of available cash.

The recognized steps for speeding cash receipts may be quickly mentioned. From the time the customer places his order until cash is received by the business at someone of its locations, there are points where a speed-up may be possible. Many of these possibilities have other aspects. Some are improved customer service, need for warehouse stocks at various locations, factory scheduling, and all the repercussions an order generates between the customer and his supplier. These would require many articles and books for complete discussion. The present discussion will mention them only in their relation to the speed of cash inflow.

A short look at these steps for the possibility of increased speed shows that they start from the moment of receipt of the order. Perhaps the salesman should write out the order, shipping ticket, account receivable charge, and commission analysis ticket at one writing. Perhaps the order should go on a leased teletype wire within minutes. From this point onward—with all steps considered in relation to all others—through production if necessary, through billing, through collection and with due attention to trade customs and customer psychology, every point has well-recognized improvement potential.

Once Cash Is Received

However, there is a sometimes neglected final step in the speeding of cash, which this article will discuss at some length. The time between the moment at which a customer forwards a check to clear his account and the moment that the check becomes spendable cash to the company, represents still another time-interval subject to control. For many years, companies concerned with speeding cash flows disregarded this period and concentrated their efforts on the earlier phases. Some thirty years ago, some bankers observed the time-waste inherent in the practices followed by many national companies of having customers' checks remitted directly to the home office and of accumulating and remitting local funds in a haphazard manner.

Since then, both banks and business firms have given increasing attention to this phase of cash flows. Around it they have developed a recognizable system with certain characteristic principles that maximize the availability of

cash, once the customer has forwarded a check in payment of his account. For companies which have not as yet incorporated such a system into their cash-planning program, an important opportunity of speeding cash flows is available. While one may tend to associate the notion of money flows with financial institutions, control of these flows is just as important to the manufacturer or distributor of goods. And, indeed, such systems have been adopted in many fields which have diversified outlets, such as grocery chains, variety stores, oil companies and various manufacturing enterprises.

Business firms receive payments in checks drawn on local or out-of-town banks and also in cash, as often in retail transactions. In either case, a varying degree of time may elapse between the collection and the availability of funds for spending. Once availability has been established in a particular locality, the funds still may have to be transferred substantial distances for use in another section. Unless such transfers can be made quickly, companies will still have to keep idle reservoirs of cash in different spots to permit prompt payment in local funds. The current trend towards industry diversification over wide geographic areas has both lengthened and complicated these movements of funds. The economics of time and space thus has become extremely important in maximizing the availability of cash to a firm.

Examples of methods of increasing cash availability and flexibility are:

EXAMPLE 1

An automobile manufacturer changes its system for depositing checks. Previously, the manufacturer's dealer gave his check to the auto-transport driver who carried it back to the office for transmittal to the plant controller. Under the revised methods, the driver air-mails the check in a mail deposit envelope directly to the depository bank.

EXAMPLE 2

At 10 a.m. one day, a distraught attorney rushed into the treasurer's office of a large New York financial institution. With great concern, he indicated that because of illness he had neglected to provide for the transfer of ten million dollars to San Francisco for a real estate closing to take place in one hour. By 10:30 a.m. the treasurer's office had siphoned the required funds from Dallas, St. Louis and Philadelphia to the bank in San Francisco where the closing was arranged, permitting payment to be made in local funds as scheduled.

These illustrations highlight the emergence of cash-flow controls as an important aspect of financial management. The heart of such a system of cash planning is a carefully designed structure of banking relations.

Making Full Use of Banking Relationships

In order to permit funds to be shifted easily among widely separated geographic areas, the nation's commercial banks are linked by correspondent relations, the wire-transfer system of the Federal Reserve Banks, and a private-wire system connecting the major banks of the country. When a firm does a national business, its banking arrangements may be intricate and broadly spread. At the close of 1958, for example, the New York Life Insurance Company and its 206 branches had accounts in 218 banks scattered throughout the United States and Canada.

In a cash-flow system the arrangement that a firm makes with its banks may differ. In general, three kinds of relationships are established. At local levels, certain institutions are selected to service branches or divisions in the area. At focal spots chosen to blanket different geographic sections of the country, other banks are designated as concentration centers to which the surplus funds of the local institutions are transmitted. Finally, in the home-office city of the corporation, one or several control banks are selected to head up the entire system and work directly with the home office. In the case of New York Life, during the past year, 33 banks served as concentration centers outside of New York City and three banks in New York City were the nerve-centers of the entire system. By this means, the company's balances are divided among three chains with linked offshoots that stretch across the country.

The three-layer system of banking relations, as well as the operating arrangements that are made with the different kinds of institutions, may be adjusted to suit the needs of individual corporations. In general, the more banks that are spread over the country, the shorter are the pipelines through which funds must flow but the larger are the balances that are immobilized at the different institutions. In essence, the development of an over-all system involves a balancing of the length of money flows with the clusters of funds that may be tied up in different spots. Now, what are the elements that enter into the operations of such a system?

A Knowledge of the Location of Cash

The financial manager located in the home office of a corporation must know at all times the amount of cash held in each of the banks throughout the country so that he may be able to use these balances as he sees fit. The principle commonly employed to keep the financial manager in the home office informed regarding the movement of cash is to impose limitations on the size of

the accounts kept at certain institutions, while giving them the responsibility for gathering and transmitting excesses to other banks. By establishing a working balance at the local banks, for example, the treasurer in the home office knows the amount of cash at each of these institutions. Excess funds are remitted to the concentration-center banks, which advise their banking correspondents in the home-office city of the amount of deposits and balances at the close of business. The latter institutions, in turn, relay this information by telephone to the company's home office.

At the concentration-center banks, it is customary to keep balances at established levels which provide the corporation with an operating basis and the banks with the means of earning a fair profit. As incoming deposits build up these funds, the amounts in excess of the established levels are available for immediate use or investment and can be readily transferred by wire to any other section of the country where they may be needed. Because regional changes occur only through deposits and wire transfers, this system helps the treasurer keep track of the company's cash flow; it also permits him to gauge desired shifts in balances from one section of the country to another without the necessity of building up balances in banks where the company's home office is located, at the expense of its regional balances.

Methods of Movement; Use of the Transfer Check

Within the framework of the banking-corporate relations which we have described, three major procedural areas exist that govern the time required for converting the checks of widely scattered customers to spendable cash. The first is concerned with the length of the pipelines through which the funds must flow. To curtail these movements, customers are requested to transmit payments to regional collection centers located sufficiently close to require only one day's mailing time. Companies with a network of sales outlets may use their own regional offices as collection points, from which the funds are routed to concentration centers. With the pipelines shortened, the second area of control involves the speeding of the cash movements by accomplishing transfers more effectively. Corporations may shift funds by means of check, wire, telephone, or depository transfer checks. The first three methods are obvious; the last makes use of a specialized and less well-known instrument.

The depository transfer check is employed only to transfer funds; it is addressed to any designated bank in the United States with which a corporation has money on deposit, directing it to pay an indicated sum to another designated institution for credit of the corporation. The check is not signed by an

officer or employee of the initiating corporation but bears, in the lower right-hand corner, the corporation's printed name, which is considered an official signature. The instrument is authorized by means of a resolution of the board of directors which is forwarded to a bank along with a letter of instructions. The depository check is a convenient means of making transfers because it does not require a signature, the name of the payee bank is already inserted, and its purpose is clearly defined. Which method is selected depends upon the size of the balance the corporation desires to keep, the amounts of the transfers, and the extent to which the corporation wants the local office to administer the transfer of funds.

The third area of control over cash flows deals with the timing of these movements. The frequency with which funds are shifted varies with the size of the business. Since it is uneconomical to effect movements in units of less than one thousand dollars, a local office that does several hundred dollars worth of business each day may transfer deposits from a local to a concentration-center bank only once a week, while a more active office may require daily transfers. Policies governing who is designated to initiate action also vary. Responsibility for taking the necessary steps may be given to personnel in the local office or provision may be made for automatic bank remittances.

Lock Box Services by Banks

National companies preferring to collect receipts at the home office may do so through use of the lock-box technique. Under this arrangement, a firm rents a lock box in its own name at the local post-office station servicing the bank designated to act as the company's collection agent in a defined regional area. It notifies its customers and indicates on its invoices that payments are to be forwarded to the box. The company executes an agreement with the bank authorizing it to enter the box as an agent. Mail is picked up at frequent intervals during the day, envelopes are opened, checks are endorsed, deposited to the firm's account, and processed for presentation. On the same day, the bank forwards to the company by air mail a deposit slip listing all remittances received, together with the envelopes and their contents, except for the checks which are microfilmed for record purposes. Unpaid items, those which require special endorsements, and those for incorrect amounts are handled by pre-arranged methods. Use of the lock box saves the time required in collecting checks and frees a company from the burden of physically receiving checks and making up daily deposits.

Managing Payment of Funds

Control over the outflow of funds is important for two major reasons. First, a company obtains the maximum utility from its funds when it can keep them working as long as possible. In order to achieve this for an enterprise with decentralized activities, it must be possible to shift funds to the spots where they are required promptly and at a moment's notice. Another reason for controlling payments is to service more effectively those doing business with the company, thereby cultivating customer good will.

The same system which permits the more rapid flow of funds into the home-office city banks of a company also enables a reverse movement to occur when desired. Assume, for example, that the financial manager located in New York City wishes to transfer funds to a branch office in Lexington, Kentucky. He notifies the New York bank of the amount and the transferee. The New York institution reduces the parent company's deposit account on its books, increases that of its correspondent—the transferee bank—by the same amount, and wires its correspondent of the transactions. The latter bank increases both its cash account in the form of interbank deposits with the New York institution and the deposit account of the branch. The net effect is that the funds available to the company in its New York bank are decreased while those at the disposal of its regional office are increased.

The financial manager may arrange for the funds to be made available in different forms. Should he desire to transmit funds directly to another party, be gives the necessary instructions to the New York bank which, while debiting the company's account and crediting that of its correspondent as previously, now notifies the correspondent to issue a cashier's check payable to the designated individual.

If the financial manager simply directs his local bank to shift funds to the desired locality, the bank will exercise its own judgment with respect to the method of transfer. A customer may desire funds with immediate availability. In this case, the transfer will have to be made through "Federal" funds which represent the reserves of member banks and, therefore, have immediate availability, in contrast with local funds requiring one day's clearance. Assume, for example, that an individual in San Francisco has arranged to borrow a designated sum from a New York insurance company to fund a bank loan. On the day of the closing, he may desire immediate availability to stop bank interest charges. In this case, he will request the remittance of "federal" funds which will permit him to save one day's interest.

Compensating the Bank; Understanding Service Charges

The extensive use that corporations make of the clearing, collecting, and other services of commercial banks imposes extra costs on these institutions. To compensate them, companies may pay special fees but the far more common practice is to maintain balances. From a company's point of view, it is important to maintain these balances at a minimum in order not to lose income otherwise realizable from these funds.

To determine the basis of charges or funds maintenance arrangements, the banks may be requested to forward monthly analyses of the company's accounts showing the breakdown of activity and the charges applicable to the different services rendered. The starting point of the analysis is the corporation's average daily ledger balance for the month, reduced by the amount of uncollected funds representing checks deposited but not yet cleared. The net figure represents collected balances. From this is deducted an allowance for the legal reserve the bank is required to hold. The result is the portion of the corporation's balance which has been available to the bank for its loans or investment during the period. Application of an average earnings rate to this net figure produces the estimated gross income to the bank against which is offset the cost of the services furnished by the banks during the course of the month. The difference represents the net income obtained by the bank from the corporation's balances kept with it.

Companies make comparative studies of these analyses and may request banks to explain items which appear out-of-line. While the credits allowed and charges imposed by the larger banks are reasonably uniform, the practices of the smaller institutions may vary widely. A firm desiring to keep good banking relations will follow its cost studies closely in order to make certain that the balances it keeps are providing the basis for sufficient compensation to its banks.

In measuring the balances which a bank has available for investment to offset its costs of handling cash for the business, the financial manager should take into consideration balances which are not on the books as funds which the company may draw on but yet are available to the bank through its transactions with the company. These balances may consist of special deposits, in escrow or for other purposes, which draw no interest. They should certainly include the deposits of Federal income and social security taxes withheld, together with the employer's share of social security taxes. These deposits, while on call by the Federal Government, are available to the bank for periods of variously estimated lengths, running from 10 days to perhaps 45 to 60 days in some cases. In the case of some manufacturing businesses, similar deposits of

manufacturer's excise tax can also be substantial. These amounts, less necessary reserves, can be earning for the bank at the short-term money rate over the period retained.

Still other amounts are made available to the banks. The working capital of a company is represented by its checkbook balances. On the other hand, in determining the level of funds to be kept as compensation balances with banks, it is logical for a company to consider the bank's ledger balances rather than its own checkbook balances. Through studies, a company can estimate the amount of checks likely to be outstanding any time against a bank account. It may be determined, for example, that four million dollars of balances shown in its checkbook is sufficient to support five million of dollars of deposits at a particular bank. By comparing its checkbook and bank ledger balances in order to allow for this outstanding float, a company can further control the amount of actual cash that must be kept with a bank.

The Importance and Requirements of a Cash-Management System

A fully-planned cash-control system endeavors to maximize the usefulness of cash by getting bills out faster, improving the collection process, accelerating cash flows and, finally, investing the surplus funds generated. Unless a company has already considered carefully the full scope of these activities, it probably can improve its operations in at least some of these respects. More specifically, the advisability of introducing an integrated program to curtail float depends upon the amount of immobilized funds. These may be gauged by multiplying daily receipts by extra clearing days. By applying an earnings ration to this sum, the potential savings may be measured against the dollar expenses of running the system plus the imputed costs of the additional compensating bank balances that may be required.

But, even without these positive gains, pressure exists to install a system of cash balance management and control because of the tendency of others to do so. As the suppliers of a firm take steps to increase their own availability of cash by speeding up the collection of the checks they receive, the company will find that it has less use of cash from this source. And, once a corporation forwards its check to a supplier, the interval of time before it is returned depends on the supplier's actions. At one time, the corporation could rely on as much as ten days passing before a check forwarded to an out-of-town supplier would clear at the local bank on which it was drawn. As industry has become conscious of this "dead" float, many suppliers have taken measures to accelerate clearances, thus speeding the flow of funds from their customers, who must

take measures to influence their inward flow correspondingly or find their cash availability lowered; a "do-nothing" attitude tends to result in an effective loss of funds. Corporations may find that their cash availability is reduced in this manner, even though no change occurs in business conditions or trade terms! In order to prevent this condition and, if possible, overcome it, the financial manager must study the direction taken by and time required for its own paid receivables to become converted to usable cash. Over these movements, he can exert control.

The introduction of an overall cash-control system requires numerous planning decisions, such as the location of depositories, selecting specific institutions in the area, formulating techniques to keep informed of their status, working out methods of establishing minimum balances, arranging for the transmission of instructions, determining how to take advantage of unused funds, developing the forms required, and coordinating these various activities. The operations of the system must be under constant scrutiny to uncover further methods of maximizing the utility of cash balances.

Assuming that a system has been established and arrangements for constant follow-up and evaluation have been made, it must be coordinated with those of the accounting and investment departments. Its effects must be incorporated in the company's cash forecasting. The impact of the system's operations on the depository banks must be gauged and procedures developed for enlisting the cooperation of these institutions, both in handling the shift of funds and in providing assistance to the company's sales personnel when necessary. Because of the importance of these decisions and the far-reaching ramifications that installation of a cash control system can have on a company's operations, the responsibility for visualizing its possibilities and exploiting the cash-savings opportunities afforded is properly a function of top management. Actual supervision of the running of the system, once installed, may be left to lower-level executives, although decisions arising from the uncovering of new cash-savings opportunities and periodic reviews invariably require top-level attention once more.

Cost Reporting for Mobile Equipment in the Mining Industry

by ALTON R. ESHBACH

IN OPEN PIT MINING, as well as in quarry operations, the control of mobile equipment costs will ultimately have a marked effect on the total cost of the final product. It is this which lends significance to the improved practices we have developed.

The Questions We Could Not Answer

Prior to the method of recording and reporting described below, our costs for servicing and maintaining all types of mobile equipment were grouped into various equipment classes. For example, every month our maintenance foremen knew the total cost of maintaining and repairing eight power shovels, twenty-four 22-ton capacity diesel trucks, eight bulldozers, etc. This proved inadequate data when, with the advent of a sound management-sponsored budget and cost control program, each maintenance foremen was asked to explain his variances or why his costs in any specific area deviated from normal. He came to the accountant for help in detailing his costs and began to ask questions like:

1. If my costs are abnormal, what individual unit in the group is causing the trouble?
2. If, in my opinion, the repairs are ordinary and necessary, is it time to replace the specific piece of equipment?
3. What are the costs for servicing the unit as compared with the special repairs?
4. Are you in a position to tell me results of comparisons of products used on the equipment? (For example: one brand of tire versus another).
5. Will variations in costs be followed up and operators' abuse of equipment be reported to management?
6. Can you give me an idea as to whether our preventive maintenance program is functioning as anticipated?

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As an approach to the problem of trying to answer many of these questions, we assigned a number to each piece of mobile equipment and prepared an equipment catalogue, setting forth many of the established facts about each item. The individual sheets in the catalogue contained generally the following information: type of equipment, equipment number, capacity, date acquired, original cost, serial number, motor or engine number and, finally, the service to which it was assigned. All equipment was placed in seven specific categories, namely, graders, cranes, drills, power shovels, heavy trucks, light trucks, and dozers.

We sat down with the operating foremen and the catalogue to review the background of some of our maintenance problems and discuss the frequency and manner in which it would be desirable to have these costs presented. It was basically agreed that maintenance costs fell into three categories:

1. Service or routine maintenance or, more specifically, preventive maintenance.
2. Planned overhauls.
3. Repair of breakdowns or miscellaneous unpredictable work.

The operators were insistent that the procedures and forms to be utilized as a basis of the final report should be kept simple and understandable. As a result of this meeting, we established the procedures and forms which now serve as the basis of our monthly mobile equipment unit operating cost report.

Repair and Service Labor Cost Reporting

For repair labor, as distinguished from service labor, Mechanic's Daily Time Report (Exhibit 1) was designed which is completed by each maintenance em-

MECHANICS DAILY TIME REPORT

Date 10/20/59

Total hours: 8 Shift: 7 - 3

Unit no.	Description of work performed	Hours
124	Remove and repair hoist pump	4
128	Repair rear hub	2
128	Change both rear tires	2

Mechanic: _____

Foreman: _____

EXHIBIT 1

ployee for each turn worked and is approved by his supervisor. A full description of the work performed, by unit number, and the time spent on each job is reflected on this form. These are summarized daily on a Daily Labor Distribution Sheet (Exhibit 2), to the proper unit number.

HEAVY TRUCKS

LABOR DISTRIBUTION - GARAGE AND ASSIGNED MAINTENANCE

Date	October 15		October 16		October 19		October 20	
Unit No.	Repair	Service	Repair	Service	Repair	Service	Repair	Service
121								
122			6-2-1	2-1				
123				1	14-2	1	4-2	
124	4			3-1				1
125					6-2		6-2	
126			2-6-10	4-1				
127				2				
128	2	2						4
129							2	
130								
131							8	6
132				6-1				
133			17-6					
134								
135							8-2-3	2
136								
137	14-1				8-2	2		
138								
139								
140							6	3

EXHIBIT 2

A group of mechanics are called checkers and perform a service function on the mobile equipment during their full working turn. For a record of their particular activities, we designed a Daily Lubrication—Tire and Battery Report (Exhibit 3), which also serves as a distribution of fuel and lubricant consumption. The labor expense of these service mechanics is distributed to individual units on the basis of operating hours, assuming that the more a unit operates the more of this service-type labor it requires. Daily Drill Check List (Exhibit 4), records the drill cost associated with service. (The service labor is accumulated in the same manner as already described for repair labor on the form illustrated in Exhibit 2).

Weekly totals on Exhibit 2 are posted to a Labor Distribution Report (Exhibit 5) by cost center only for the purpose of being used as a basis for payroll distribution of each maintenance shop. For labor costing, following the accumulation of all items of expense for the maintenance shop (including utilities, supplies, etc.), a charging rate is determined by dividing this expense

Shift: 7 - 3 DAILY LUBRICATION - TIRE & BATTERY REPORT Date: 10/20/59

Unit no.	Unit description	Fuel oil	Gasoline	Engine oil qts.	Trans. qts.	Final dr. qts.	General lubr'tion	Tire check	Air clean -er qts.	Battery check	Anti-freeze	Preventive maintenance remarks
121	Heavy Truck	32		2	/	✓	✓	✓	1	✓	4	Engine noise
122												
123		18		✓	✓	1		✓	✓	✓	✓	
132		22		3	✓	✓	✓	✓	1	✓	1	
133		16		4	✓	3	✓	✓	1	✓	✓	Engine using oil
134												
135		49		✓	4	✓	✓	✓	✓	✓	6	Radiator heats
136												
137		51		✓	✓	✓	✓	✓	✓	✓	✓	

Total shift gallons 327 Mechanic: _____

Pump no. 1 end of shift: 429616.4
Pump no. 2 end of shift: 216479.2 Foreman: _____

EXHIBIT 3

by the total hours used in repairing and servicing the mobile equipment. This rate is applied to the total repair and service hours spent on individual units as reflected on the labor distribution sheet.

Costing Material Supplies and Other Equipment Expenses

Material issues from the warehouses are made on a three-copy storeroom requisition. One copy of each requisition is returned to the maintenance clerk who hand-sorts them by equipment unit number and accumulates total cost. Lubricants are distributed as service material from the report already exemplified in Exhibit 3. Total gallons of fuel consumed per operating unit are accumulated as recorded by the checkers on this report and the dollar value calculated by applying current cost per gallon.

In an open pit mine or quarrying operation, tires are a major expense and proper cost accounting and control is given special consideration. Three basic forms are used to maintain proper control. Tire change tags and mileage record

DAILY DRILL CHECK LIST

Unit No.	Hrs.	Machine Part Checked	Unit No.	Hrs.	Machine Part Checked
402	2	all guards			derrick head
		propelling clutches	402	2	guide blocks
		jacks			all sheaves
		tracks			rubber shock absorber
		track frames			shafts and pins
		track rolls			bailer
		drive chains	411	3	stem
		sprockets & shafts			stem wrenches
		adjustment bolts			safety chains
		tumbler shaft	412	1	clutches
		hyd. lines			brakes
		pump & coupling			gears
		controls (all)			friction pulleys
		derrick			loose bolts
		derrick braces			bearings
		cables (all)			bushings & pins
		all guides			pitman & bushings

Remarks: (Report all defects) 411 needs stem changed

412 clutch band wore

Repairmen: John Doe Date: 10/20/59

Foreman: W. J. Fisher

EXHIBIT 4

PIT MAINTENANCE

LABOR DISTRIBUTION REPORT

Cost Center	Shovels		Heavy Trucks		Dozers		Drills		Graders		Light Trucks		Cranes	
	Rep.	Ser.	Rep.	Ser.	Rep.	Ser.	Rep.	Ser.	Rep.	Ser.	Rep.	Ser.	Rep.	Ser.
	41	12	49	8	40	22	78	24	24	11	3	1	17	5
	18	3	62	19	16	8	16	11	18	9	14	2	2	1
	53	21	21	11		12	47	16			6	2	14	
	72	13	82	21										
	18	9	16	6										
	37	16												
	41	4												
Totals	280	78	230	65	56	42	141	51	42	20	23	5	33	6

EXHIBIT 5

forms are supplied by the major tire manufacturers. The tire change tag is used to indicate the movement of each tire in and out of service, while the mileage record is a complete record of the service each tire gives. In addition, we have developed a form authorizing the scrapping of any tire. This form, after inspection and completion, ensures us full use of any tire.

Electric power, use of mobile cranes and miscellaneous general labor charged to mobile equipment, are distributed to units on an operating hour basis.

Reference Reports; Qualified Personnel

In addition to the forms used in accumulating maintenance costs, we developed a Unit Index and Repair Record (Exhibit 6). This record reflects information and costs on individual pieces of equipment and is posted daily from the daily labor distribution sheet, and the storeroom requisitions. By developing a job order system for major overhauls and large emergency jobs, we have been able to accumulate the cost of specific jobs on this unit index and repair record. The maintenance foremen refer to it quite frequently in an effort to determine why costs for similar jobs vary. This is one other significant report. Exhibit 7 reflects our unit operating cost report (for heavy trucks) which is the final report published monthly for each of our seven equipment groups.

UNIT INDEX AND REPAIR RECORD

Unit No. 121 Heavy truck — Mfgr. J.J. Don Corp.

Serial no. 2634-42 — Date in operation 7/1/57

Model no. 1314-J — Purchase price 18000.

Date	Part no.	Part name	New	Used	Part cost	Labor hours	Labor $	Oper. hrs.	Repaired by
7/2/8	3G416	Hub	✓		415	22	116	1492	701-869
8/16/8	S1494	Hoist pump		✓	Rep. 63	3	14	1723	623-
2/2/9	41592L	Hood	✓		278	6	31	2342	49-562
10/4/9	1810S61	Driveline	✓		169	2	9	3140	104-

EXHIBIT 6

Of major importance in a successful publication of unit operating costs are the services of a clerical employee who not only has the usual knowledge of proper presentation of accounting figures but also some mechanical aptitude. Since the records, from which all data relating to operating cost originate, are prepared by operating and maintenance employees, the clerk must be able to speak their language. A close proximity to the maintenance operation is also a valuable asset. This allows him to make on-the-spot checks and clear up any inadequacies in reporting information.

MONTHLY UNIT COST REPORT
HEAVY TRUCKS-OCTOBER 1959

Date	Unit Type	Unit No.	Material Costs: Repairs	Material Costs: Services	Labor Costs: Rep. Labor Hrs.	Labor Costs: Rep. Labor Costs	Labor Costs: Serv. Labor Costs	Fuel Used	Fuel Costs	Monthly Oper. Total Hrs.	Cost per Oper. Hr.	Total Hrs. 1st Mo.	Av. Cost/Hr. Yr. to 1st of Mo. Total
Oct.	Heavy	121	$ 505.	$ 131.	79	$ 380.	$ 164.	624	$ 82.	$1264. 210	$ 5.98	2,106	$ 8.38
		122	381.	121.	69	328.	151.	671	88.	1069. 194	5.51	1,763	9.05
		123	549.	532.	80	380.	186.	805	105.	1752. 238	7.36	2,223	10.53
TOTALS			$20,711.	$11,370.	3,135	$14890.	$5161.	25,061	$3283.	$55415. 6606	$8.39	68,225	$8.83

(1) 2 Transmission Cases
(2) Banjo and Spindle
(3) Major Engine rebuild

Tire Costs - including repairs $7,812.
Spare Boxes 522.
Steering pumps 671.

Rebuild Transmissions $ 989.
Drivelines 456.
Repair hoist pumps 635.

EXHIBIT 7

Can Supply Most of the Answers Now

As a result of the publication of this monthly mobile unit equipment cost report, we have answered most of the questions asked by the maintenance foremen. More specifically, we have pointed out from time to time, costly repair which resulted from inexperienced equipment operators, additional costs of operating and servicing due to climatic conditions, breakdowns resulting from improper maintenance or mechanical work, etc. It has also given each foreman an opportunity to compare his figures with other makes and types of equipment as well as with other similar operations in the area and, finally, it has given management some concrete figures on which to justify the expenditure of funds for the replacement of equipment.

Through the installation of our mobile equipment cost system and reporting, both the maintenance foremen and the operating foremen are convinced they have a tool for analyzing their performance that was never available in the past.

Eliminating Driver Bookkeeping in Retail Dairy Accounting

by ROBERT L. HUTSON

THE PROBLEM OF CONTROL over accounts receivable for the retail dairy operator has existed for as long as the industry has existed. Many approaches have been made to this problem but none, I believe, has achieved the measure of success recently realized by three major dairies in Rhode Island. Without specific reference to the individual dairies involved, this writing is intended to outline generally the common problem which existed in all of them, how this problem was solved and, lastly, the results obtained from the related change in the accounting system.

Problems and Losses in Conventional Methods

In almost every instance, the route driver salesman maintained the only records of monies due the dairy company. He not only sold and delivered the various dairy products but also did his own billing, issued his own weekly statements and collected all payments. This bulk of accounting work required approximately 2 hours a day, which he considered route time. The dairy operators generally paid the driver from $4 to $12 extra per week to perform this bookkeeping chore. The dairy has attempted to control the driver by charging him out with a certain number of units every day (load sheet) and making him settle his cash once a month. The latter method constantly resulted in shortages and differences which were impossible to reconcile and had to be charged off. Another common procedure was to charge back the shortages against the driver's commission, but this was unsatisfactory because, as a practice, it resulted in one of three things: (1) driver spends many hours additional work until errors resulting in shortage are found, (2) dairy loses driver or (3) driver over-charges customers until shortage is made up. In all of these cases, the dairy ultimately loses.

On a more general basis, the following are just a few disadvantages to the dairy operator when his drivers handle the accounts receivable bookkeeping:

1. Some drivers can and do over-charge customers. This is a situation the dairy cannot control.

ROBERT L. HUTSON, Providence Chapter, 1956, is a Senior Accounting Salesman for National Cash Register Company. Mr. Hutson attended Bryant College and University of Rhode Island.

2. Driver can show discount to customer on his settlement sheet but customer does not receive it.
3. Unintentional errors appear in billing and posting route book.
4. Drivers are prevented from devoting time to soliciting new business, or selling other high-profit items, such as bacon, butter, ice cream, etc.
5. Good salesmen are usually poor bookkeepers.
6. Good bookkeepers are usually poor salesmen.
7. The dairy has no record of its accounts receivable. Years ago, during a milk strike in New York, all drivers threw their route books into the East River. The companies suffered tremendous losses without any way to collect.

A Bookkeeping Machine Plus "Scored" Route Book

To sum up, the bookkeeping job by the route salesman is very undesirable but a necessary evil. To centralize all this work manually in the office is too expensive and requires too many people. Tabulating equipment was installed for one year in a major Rhode Island dairy but was discarded for both of these reasons.

An entirely new approach based on centralized accounting was developed utilizing a new multiplying bookkeeping machine which could create the weekly bill for the customer, compute all extensions, and post a permanent history record card for the dairy. Other important by-product information also became available to the dairy operator under this system. First, it directed attention to new accounts by route weekly. It also disclosed instances of no deliveries for a week. If this is brought to the dairy's attention immediately, there is a chance to save the account. In addition a tighter collection policy resulted through automatic notification of overdue accounts weekly.

Most dairies are on a six-day week. Each driver has one route and each route has two parts. Part 1 calls for deliveries Monday, Wednesday, and Friday. Part 2 has deliveries on Tuesday, Thursday, and Saturday. The driver's route book contains a page for each customer. This is called a score sheet. He marks in a box the number and type of product (using a letter or a symbol) for each product. One day is represented by 5 boxes, since this is the maximum number of different products one customer usually will buy at one time.

Under the system established, route book Part 1 would be billed on Monday or Tuesday for the preceding week's deliveries. The driver has scored

each customer's page for the three deliveries involved. He has also turned in his cash receipts for that week. A pre-addressographed statement (Exhibit 1)

STATEMENT

TURNER 4-9300 **East Greenwich** TURNER 4-9301

DAIRY CO.

NAME AND ADDRESS

AMOUNT PAID

RETURN THIS PORTION WITH PAYMENT

DESCRIPTION	PRICE	DELIVERIES THROUGH	CHARGE	AMOUNT PAID	BALANCE
			BALANCE FORWARD		

PAY AMOUNT IN THIS COLUMN

EAST GREENWICH DAIRY CO.

FOR YOUR CONVENIENCE
DETACH AND USE THIS HANDY

Extra Order Form

____ Qts. Past. Paper (QPP)	____ Special (SP)	____ Qts. Flavored Milk (QFM)
____ Qts. Homo. Paper (QHP)	____ Pints Sour Cream (PS)	____ Qts. Butter Milk (QBM)
____ Qts. Homo. Glass (QHG)	____ Bacon (BA)	____ Qts. Skim Milk (QSM)
____ Qts. Gold Medal Glass (QGG)	____ Butter (BU)	____ Pts. Heavy Cream (PHC)
____ Qts. Grade A Homo. (QGA)	____ Cottage Cheese (CC)	____ ½ Lbs. Cottage Cheese (HCC)
____ ½ Gal. Past. (HGP)	____ Pints Yogurt (PY)	____ ½ Pt. Light Cream (HLC)
____ ½ Gal. Homo. (HGH)	____ Margerine (MG)	____ Pts. Light Cream (PLC)
____ Qts. Past. Glass (QPG)	____ Eggs (EG)	____ Pts. All Purpose (PAP)
____ Qts. Select Homo. (QSH)	____ Orange Juice (OJ)	____ ½ Pt. Heavy Cream (HHC)

DELIVER THE ABOVE ITEMS WITH MY REGULAR ORDER ON _____

NAME _____

EAST GREENWICH DAIRY CO.

LOCAL PRODUCERS OF FINER QUALITY DAIRY PRODUCTS

EXHIBIT 1

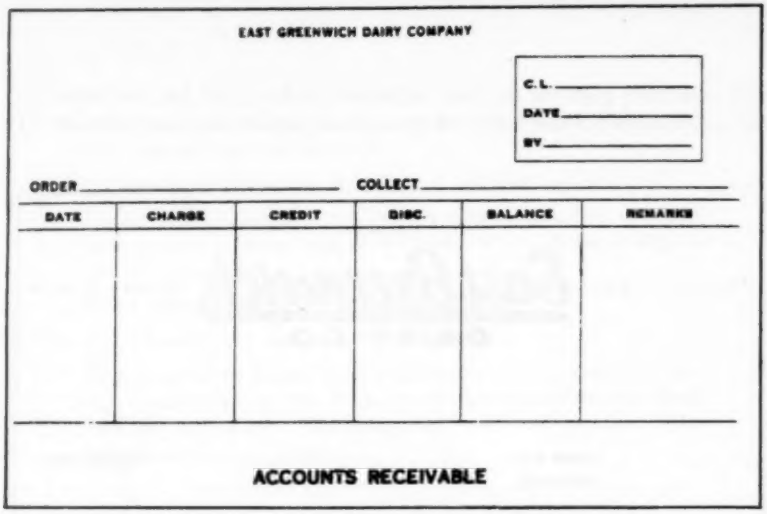

EXHIBIT 2

and the customer's history ledger card (Exhibit 2) are inserted side by side in the carriage of the accounting machine. Any previous balance is picked up and printed on the statement. The posting sequence is as follows:

1. The operator indexes the number of units delivered on Monday (this will print on the first of three small unit columns on the statement), depresses the description code key, and the price per unit on the amount keyboard. (The price is shown on a strip next to each description key.) The machine is then operated and the carriage moves to the next unit column.
2. The procedure is completed again on the units delivered of the same product on Wednesday (second unit column). The machine operates and tabulates to the third unit column (Friday deliveries).
3. After entries for Friday's deliveries on the same product, the operator may elect to return to the first unit column for another product, and so on.
4. When units and prices for all products are entered, the machine makes one mass multiplication and the total charge is computed and printed.
5. Any payments are then entered.
6. Any discounts are then entered.
7. Machine now automatically computes and prints new balance on statement.
8. Machine automatically tabulates to history card and completely automatically prints on the card:

Date	Total discount
Total weekly charge	Total new balance due
Total weekly payments	

At the end of each part of a route, totals are automatically printed on a route control card. This information comprises total charges for week (this plus cash sales must balance to load sheet), total payments for week (this must equal money turned in), total discounts for the week, total balance outstanding, and total old balances picked up (trial balance proof). The rate of production is 125 to 150 customer billings per hour. Since a route consists of 300 to 400 customers, Part 1 of a route will take approximately 1¼ hours. Everyone is billed weekly, regardless of whether he pays monthly or weekly. There are numerous system and control advantages to this, both to the customer and the dairy.

Many Advantages in Control and Goodwill

On Tuesday night all the completed bills for Part 1 of each route are turned back to the route drivers with their route books. All the new machine-printed bills are bound (stapled) at the top part of the bill (above perforation). On Wednesday, at each customer delivery, the driver merely tears off the customer's bill and presents it to him for payment.

The numerous advantages of the system include:

1. Protects dairy by forcing route salesmen to post all cash payments to route books and turn in all money collected before the end of each week.
2. Protects dairy by preventing route salesmen from overcharging customer and pocketing the money.
3. Protects dairy from carelessness and forgetfulness by proving the accuracy of scoring the route book at the end of each week.
4. Protects the dairy from the loss of money or customer good will by eliminating errors in computing charges, extending balances in the route book and making out bills.
5. Protects the dairy by proving that the total value of all products charged out to the route salesman for the week agrees with the total value of the billing plus the cash sales at the end of each week.
6. Protects the dairy by proving that all account balances are accurately brought forward each week.
7. Protects the dairy by accumulating and controlling all discounts given by each route salesman on a weekly basis.

8. Protects the dairy by revealing shortages and overages for each salesman at the end of each week.
9. Protects the customer by providing a weekly statement showing all deliveries on a daily basis.
10. Protects the customer by providing printed evidence of all payments credited to his account on a weekly basis.
11. Protects the salesman by providing each customer with a weekly statement of all delivery charges, payments, discounts, as well as the account balances.
12. Protects the dairy (as well as the route salesman) from customer dispute by providing each customer with a detailed weekly statement of his account.
13. Protects the dairy and provides valuable information on each account by providing a ledger record of each account which is always maintained by the dairy.
14. Saves the route salesmen all the time now spent adding units delivered, computing charges, adding charges, subtracting payments and discounts, extending and writing new balances, making out the bills and proving the bills.
15. Eliminates the need to check the posting of payments in the route book against the money turned in on a daily basis.
16. Eliminates the need to take a trial balance of the route book.
17. Eliminates the need to audit the route book.
18. Places the responsibility of proof to control totals with the route salesmen at the end of each week.
19. Increases the confidence of the customers as to the accuracy of the billing by providing machine printed and computed bills.

The results of this system after only a few months use indicate that, at last, a practical, economical method of accounting control has been found for the retail dairy operator.

Direct Costing — Not for Financial Reporting

by RUDOLPH MALANDRO*

SHOULD direct costing be used for financial reporting purposes, especially statements issued to stockholders? This question is definitely "up", now that the method has extensive internal use. Professor Harold Bierman, writing in the November, 1959 *Bulletin,* under the title "A Way of Using Direct Costing in Financial Reporting," suggests "that income be measured following an accounting procedure where all fixed costs are considered expenses of the time period" and that, "the inventory can be presented at full cost, using one of the relatively sound methods of absorbing overhead to product." The inventory adjustment would not appear on the income statement but would be an adjustment to retained earnings. Professor Bierman also asks if the opponents of direct costing are "arguing in favor of recognizing revenue at the time of production."

Much of the absorption costing-direct costing controversy is due to the attempt to provide a single set of statements to satisfy the requirements of management, stockholders, prospective investors, etc. Why should this be necessary? Accounting information should be provided to all interested parties in a manner useful to them. If, as the proponents of direct costing feel, information provided by direct costing procedures is more useful to management, it is logical that direct costing procedures should be adopted. However, in many instances the same basic information can be obtained from existing cost systems with some modification. The problem is really one of communication between accountants and management, rather than a choice of accounting method.

The American Accounting Association's 1957 revision of "Accounting and Reporting Standards for Corporate Financial Statements" states that, "the omission of any element of manufacturing cost is not acceptable" in determining the cost of a manufactured product. It is true that there are difficulties in the proper allocaton of fixed costs, but a rational and systematic allocation is certainly superior to a system which, in effect, states that these costs will not be considered as contributing to the value of a product. It is felt the foregoing represents sound accounting theory and that it is not an argument "in favor of recognizing revenue at the time of production." Suppose the following data:

Variable costs	$10 per unit
Fixed costs	$10,000
Units produced ...	1,000
Sales	none

Under full costing, the ending in-

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ventory is valued at $20,000, the total cost of production. There is no profit or loss since the finished product has not been sold. (Of course, using the lower of cost or market method of inventory pricing, a price decline could be recognized.) Direct costing procedures result in an inventory valuation of $10,000 and a loss for the period of $10,000! The illustration is an extreme, but it is used to emphasize that absorption costing does not recognize revenue at the time of production and that direct costing prematurely charges to expense what is in reality an asset by reclassification.

I do not agree with Professor Bierman's position that the absorption costing method of inventory presentation "results in distorted income measurement" nor that direct costing will provide the remedy. This is not to say that direct costing concepts may not be used advantageously by management. However, being in full agreement with the American Accounting Association's position on the determination of the cost of a manufactured product, I feel this procedure should be followed in published financial statements. Even if the income statement is arranged on a direct costing basis, any necessary adjustments to correct the inventory valuation to full cost should be made there and not by a direct charge or credit to retained earnings. In making this point, I am urging conformity with Chapter 8 of Accounting Research Bulletin No. 43 of the Committee on Accounting Procedure of the American Institute of Certified Public Accountants which states:

> "It is the opinion of the committee that there should be a general presumption that all items of profit and loss recognized during the period are to be used in determining the figure reported as net income. The only possible exception to this presumption is related to items which in the aggregate are immaterial in relation to the company's net income and are clearly not identifiable with or do not result from the usual or typical business operations of the period."

Comparative Copy Costs

by M. K. MARTIN*

OUR COMPANY has acquired, over a period of years, four different machines for reproducing typewritten material: Ditto Model 230, Multilith Model 80, a Verifax Printer (for 1 to 10 copies) and a Bruning Copyflex Model 110. Each of these machines requires a master, special copy material, general supplies such as ink or developer, and is attended by central file personnel during the operation of the machine. As time elapsed, departmental supervisors were faced with a choice of the four machines to reproduce letters or other typewritten data.

The accounting department made a detailed study of the methods available. We scheduled the cost of each element, master, copy paper, supplies and labor at 5 copy intervals up through 50 copies. Fifty copy intervals were used from 50 to 200 copies. The results were set out in two exhibits, one graphic, the other numeric, and distributed to all persons submitting material to central files for copying.

We found the Ditto process the most economical of the four processes for any number of copies up to 200. At this point a new master had to be prepared and the unit cost increased slightly. The Bruning process cost less than Multilith or Verifax for short runs of up to 30 copies. After 30 copies, Bruning became more expensive than either Multilith or Ditto due to the relatively slow speed of the machine. (We were able to average only two copies per minute). Multilith proved costly for copies up to 30 because of the high cost of the master but, since the machine averaged 70 copies per minute, this process became more economical than Bruning or Verifax after 30 copies. The Verifax process required a new matrix for each 10 copies and, consequently, was the most expensive process for the longer runs.

Each machine is designed for a different purpose, and the degree of copy quality required would also influence a decision to select one process over another. The decision on this point was left up to the departmental supervisors but we noticed a tendency to avoid the more expensive methods of reproduction.

* Senior Accountant, Food Machinery and Chemical Corp.

Direct Costing — Practice, Not Principle

by HENRY A. KRIEBEL*

THE INCREASING popularity of direct costing makes the question of its entrance into the fold of generally accepted accounting principles less and less an academic matter. The article by Professor Bierman, in the November 1959 issue of the *N.A.A. Bulletin,* indicates the growing concern about its acceptability. It is almost taken for granted now that direct costing is a valuable management tool. The current emphasis is on how to fit it into the framework of generally accepted accounting principles.

One approach has been to attempt to stretch the meaning of principles now generally accepted far enough to accommodate the concept of direct costing. One example of this technique is to make a favorable interpretation of the statement on inventory pricing in Chapter 4 of Bulletin 43 of the Committee on Accounting Procedure of the American Institute of Certified Public Accountants. In the discussion paragraphs which follow this statement, there is the assertion that, ". . . the exclusion of all overheads from inventory cost does not constitute an accepted accounting procedure." From this it can be inferred that the exclusion of some overhead is permissible. Direct costing does exclude some (the fixed cost) but not all overhead costs; hence it follows that it could be deemed to meet the test of proper inventory costing. On the other hand, it might be argued that the quoted wording should be read in the light of the statement which precedes it in Chapter 4 and discusses the process of matching appropriate costs with revenues. If so, those who so argue would say that the relationship of cost to revenue produced by it is not determined by whether the cost is fixed or variable.

Rather that attempting to stretch meanings or argue propriety, there is another approach to this problem. This lies in the recognition that there may be more than one right answer because there is more than one problem. Many have deplored the attempt to give neat, simple answers to complex problems. Direct costing is merely one manifestation of the modern accounting emphasis on regarding costs as fixed or variable costs rather than the older emphasis of regarding them as direct or indirect costs. In other words, the emphasis has fallen on the classification of costs for management purposes rather than for bookkeeping convenience.

It is quite possible to maintain records which are capable of producing re-

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ports on either a direct cost or an absorption cost basis. The *N.A.A. Bulletins* have carried a number of such proposals, of which Professor Bierman's is the most recent. Generally, these proposals may be broken down into two groups. The first group consists of proposals made by people who are enthusiastic proponents of direct costing and, therefore, usually recommend the maintenance of the books of account on a direct costing basis, with provision for adjustment to absorption costing for purposes of financial reporting. The other proposals come from those perhaps not so enthusiastic about the merits of direct costing but who still recognize substantial value in it as analytical tool. In these proposals, the books are normally kept on what might be referred to as a traditional basis but with enough analysis or differentation between fixed and variable costs to make possible cost reports on a direct cost basis without any great hardship.

It is apparent that there is no great difficulty in having your cost data both ways. This may not be so neat as deciding that one way is right and the other wrong, but it appears to me to be a great deal more realistic. What I am really suggesting is that the accountants should take every opportunity to point out to management that there can be no simple answer to the complex questions for which accounting data are required. Unlike the farmer who opined that, "Pigs is pigs," costs are not just costs but are costs for specific purposes. The request for cost data should, wherever possible, be countered with, "What are they to be used for?" The effective use of such a valuable management tool as the direct costing concept should not be made to await its reconciliation with generally accepted accounting principles to the satisfaction of everyone. What is needed is education and not reconciliation.

Beyond These Covers

Books

The Many Sides of Depreciation

Leonard E. Morrissey, Amos Tuck School of Business Administration, Dartmouth College, Hanover, New Hampshire, 1960, Paper Bound, 24 pp.

A tax-oriented discussion of depreciation bases, provisions and allowances, this pamphlet accords attention to two methods authorized in the 1954 Internal Revenue Code, the declining-balance and sum-of-the-years'-digits methods. These methods are explained and illustrated. The presentation then discusses financial reporting problems occasioned by what is identified as "acceleration" of depreciation under the methods named.

The Capital Budgeting Decision

Harold Bierman, Jr. and Seymour Smidt, Macmillan Co., 60 Fifth Ave., New York 11, N. Y., 1960, 246 pp., $6.00.

Approaching its significant topic through comparison of methods used in the necessary decisions, this volume gives its "vote" to "present value methods", explains the use of such methods and goes on to explore the many ramifications involved in deciding upon which capital investments to undertake. "A manual for investment decisions" is offered as a last chapter, followed by appendices comprising a bibliography, problems and cases for solution, and present value tables.

How to Chart Data

Phil Carroll, McGraw-Hill Book Company, 330 West 42nd Street, New York 36, N. Y., Revised, 1960, 260 pp., $7.50.

It is the author's belief that, "anyone who can add two plus two and get the right answer can make charts to solve very complex problems." The title of this book varies that of the original volume (which included the word, "timestudy" before the word "data"). Although the applications which form background do relate to establishment of engineered standards, the "how to" treatment of chart construction is broad in character.

Data Processing Today: A Progress Report

American Management Association, 1515 Broadway, Times Square, New York 36, N. Y., Paper Bound, 1960, 143 pp., $3.75.

The addresses which this volume contains, sixteen in all, progress from consideration of management's needs in this respect (a considerable topic) to description of advanced methods, six studies of computer applications and a single study of "information processing at Chrysler" in four parts. The entire group of papers is A.M.A. Management Report No. 46 and is subtitled "New Concepts, Techniques and Applications."

Public School Fund Accounting

Sam B. Tidwell, Harper & Brothers, 49 East 33rd St., New York 16, N. Y., 1960, 298 pp., $7.50.

A portion of the economy much in the public eye for cultural and prestige reasons, is treated here from the accounting side. Endeavoring to make up for a lack of material on accounting for public school operations, the author depicts with considerable thoroughness its processes, the funds into which school operations are usefully divisible, and financial statements and reports. The part played by the Board of Education is given treatment in the closing chapter.

Essentially Equivalent to a Dividend

Seghers, Reinhart and Nimaroff, Ronald Press, 15 E. 26th St., New York 10, N. Y., 1960, 332 pp., $10.

An addition to a tax series already numbering 12 volumes on special topics, this volume is devoted to the question of when corporate distributions to stockholders, not designated as dividends, will be treated as such under Subchapter C of the 1954 Internal Revenue Code.

Setting Standards for Executive Performance

John W. Enell and George H. Haas, American Management Association, 1515 Broadway, New York 36, N. Y., Paper Bound, 1960, 120 pp., $3.75.

Identified also as A.M.A. Research Study No. 42, the present volume "presents the thinking of 15 participants in a three-day research seminar." Company experience in the development of standards in the area of executive performance is included in a chapter consisting of five company narratives. How to write out such standards is also the topic of a significant chapter.

Gaining Acceptance for Major Methods Changes

Ben Miller, American Management Association, 1515 Broadway, Times Square, New York 36, N. Y., Paper Bound, 63 pp., $2.25.

This study — A.M.A. Research Study No. 44 — is directed at office automation and achieving its acceptance. Starting with a summary of employee reactions, with recommendations, the text proceeds to six case studies in as many types of industry. Three appendices describe the research process used in making the study.

NATIONAL ASSOCIATION OF ACCOUNTANTS
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